ORDER NO. MKE9902105A1
B6

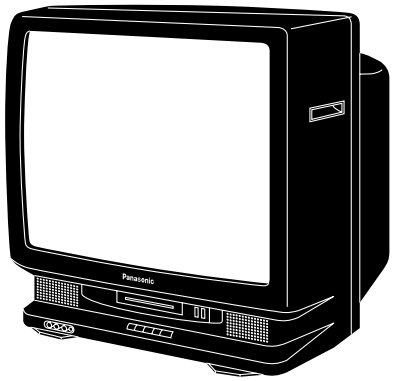
Service Manual

Combination-VCR

Simplified

Omnivision VHS

PV-M2759
PV-M2789



Please use this manual together with the Service Manual for Order No. MKS9803M326
Model No. PV-M2738/PV-M2768.

SPECIFICATIONS

ITEM		SPECIFICATION	1	2
VCR	Video	Head: 2 rotary heads helical scanning system	○	–
		4 rotary heads helical scanning system	–	○
		Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75Ω unbalanced Signal-to-Noise Ratio: SP: more than 43 dB LP/SLP: more than 41 dB Horizontal Resolution: Color/Monochrome: more than 230 lines	○	○
	Audio	Head: Normal Mono: 1 stationary head	○	○
		Hi-Fi Stereo: 2 rotary heads	–	○
		Input Level: AUDIO IN Jack (Phono type) -10 dBv 50kΩ unbalanced	○	○
		Output Level: AUDIO OUT Jack (Phono type) -8 dBv 1kΩ unbalanced	–	○
		Frequency Response: Normal Mono: SP: 100 Hz ~ 8 kHz	○	○
		LP: 100 Hz ~ 6 kHz	○	○
		SLP: 100 Hz ~ 5 kHz	○	○
		Hi-Fi Stereo: SP/LP/SLP: 20 Hz ~ 20 kHz	–	○
		Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB	○	○
		LP/SLP: more than 40 dB	○	○
		Hi-Fi Stereo: SP/LP/SLP: more than 60 dB	–	○
		Wow and Flutter: Normal Mono: SP: Less than 0.2% WRMS	○	○
		LP: Less than 0.3% WRMS	○	○
		SLP: Less than 0.4% WRMS	○	○
		Hi-Fi Stereo: Less than 0.015% WRMS	–	○
	Tuner	Broadcast Channels: VHF 2 ~ 13, UHF 14 ~ 69 CABLE Channels: Midband A through I (14 ~ 22) Superband J through W (23 ~ 36)	○	○

ITEM		SPECIFICATION	1	2
VCR	Tuner	CABLE Channels: Hyperband AA ~ EEE (37 ~ 64) Lowband A-5 ~ A-1 (95 ~ 99) Special CABLE channel 5A (01) Ultraband 65 ~ 94, 100 ~ 125	○	○
	Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/sec), LP: 21/32 i.p.s (16.67 mm/sec), SLP: 7/16 i.p.s (11.12 mm/sec) Record/Playback Time: 8 Hrs with 160 min. type tape used in SLP mode FF/REW Time: Less than 3 min. (120 min. type tape)	○	○
	Tape Format	Tape width 1/2" (12.7 mm) high density tape	○	○
FM Radio	Band Range	87.5 ~ 108.1 MHz	○	○
DISPLAY	Picture Tube	27 inch measured diagonal 100° deflection Picture Tube	○	○
GENERAL	Power	Source: 120V AC ± 10%, 60 Hz ± 0.5%	○	○
		Consumption: Approx. 157 watts (power on), Approx. 7 watts (power off)	○	○
	Television System	EIA Standard (525 lines, 60 fields) NTSC Color Signal	○	○
	Operating Condition	41°F(5°C) ~ 104°F(40°C) (Temperature) 10% ~ 75% (Humidity)	○	○
	Dimension	27-1/16"(688mm) (W) X 27-15/16"(659mm) (H) X 21-5/16"(542mm) (D)	○	○
	Weight	86 lbs. (39 kg)	○	○

1. PV-M2759
2. PV-M2789

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

Panasonic®

© 1999 Matsushita-Kotobuki Electronics Industries LTD.
All rights reserved. Unauthorized copying and distribution is a violation of law.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

DIFFERENCES BETWEEN PV-M2759 and PV-M2738

COMPARISON CHART

MECHANICAL REPLACEMENT PARTS LIST

Page No.	Ref. No.	Section No.		Pcs/ Set	PV-M2738 → PV-M2759			
					Part No.	Part No.	Part Name	Remarks
7-2	71	4		1	TXFKY1278SP	TXFKY1279SP	FRONT CABINET ASS'Y	MKA
7-2	100	6		1	VKFS2221	VKFS2235	BATTERY COVER	
7-2	121	6		1	TPC7841816	TPC7841819	PACKING CASE, PAPER	MKA
7-2	122	6		1	VQFS3440	VQFS3555	FAN BAG	
7-2	123	6		1	VSQS1501	VSQS1608	INFRARED REMOTE CONTROL UNIT	MKA

DIFFERENCES BETWEEN PV-M2789 and PV-M2768

COMPARISON CHART

MECHANICAL REPLACEMENT PARTS LIST

Page No.	Ref. No.	Section No.		Pcs/ Set	PV-M2768 → PV-M2789			
					Part No.	Part No.	Part Name	Remarks
7-2	71	4		1	TXFKY1278HGP	TXFKY1279HGP	FRONT CABINET ASS'Y	MKA
7-2	100	6		1	VKFS2221	VKFS2235	BATTERY COVER	
7-2	121	6		1	TPC7841817	TPC7841820	PACKING CASE, PAPER	MKA
7-2	122	6		1	VQFS3441	VQFS3555	FAN BAG	
7-2	123	6		1	VSQS1483	VSQS1608	INFRARED REMOTE CONTROL UNIT	MKA

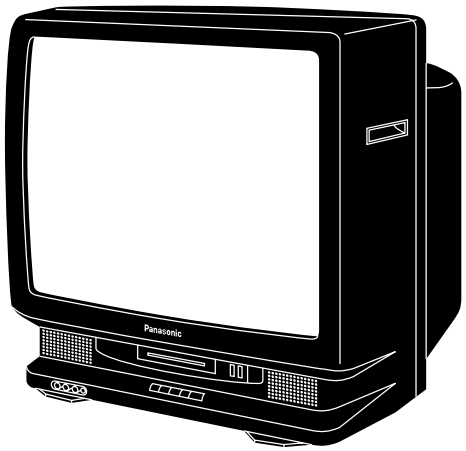
ORDER NO. MKS9803M326
B6

Service Manual

Combination-VCR

Omnivision VHS

PV-M2738
PV-M2768
PV-M2768-K



SPECIFICATIONS

ITEM		SPECIFICATION	1	2
VCR	Video	Head: 2 rotary heads helical scanning system	○	–
		4 rotary heads helical scanning system	–	○
		Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75Ω unbalanced Signal-to-Noise Ratio: SP: more than 43 dB LP/SLP: more than 41 dB Horizontal Resolution: Color/Monochrome: more than 230 lines	○	○
	Audio	Head: Normal Mono: 1 stationary head	○	○
		Hi-Fi Stereo: 2 rotary heads	–	○
		Input Level: AUDIO IN Jack (Phono type) -10 dBv 50kΩ unbalanced	○	○
		Output Level: AUDIO OUT Jack (Phono type) -8 dBv 1kΩ unbalanced	–	○
		Frequency Response: Normal Mono: SP: 100 Hz ~ 8 kHz	○	○
		LP: 100 Hz ~ 6 kHz	○	○
		SLP: 100 Hz ~ 5 kHz	○	○
		Hi-Fi Stereo: SP/LP/SLP: 20 Hz ~ 20 kHz	–	○
		Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB	○	○
		LP/SLP: more than 40 dB	○	○
		Hi-Fi Stereo: SP/LP/SLP: more than 60 dB	–	○
		Wow and Flutter: Normal Mono: SP: Less than 0.2% WRMS	○	○
		LP: Less than 0.3% WRMS	○	○
		SLP: Less than 0.4% WRMS	○	○
		Hi-Fi Stereo: Less than 0.015% WRMS	–	○
	Tuner	Broadcast Channels: VHF 2 ~ 13, UHF 14 ~ 69 CATV Channels: Midband A through I (14 ~ 22) Superband J through W (23 ~ 36)	○	○

ITEM		SPECIFICATION	1	2
VCR	Tuner	CATV Channels: Hyperband AA ~ EEE (37 ~ 64) Lowband A-5 ~ A-1 (95 ~ 99) Special CATV channel 5A (01) Ultraband 65 ~ 94, 100 ~ 125	○	○
	Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/sec), LP: 21/32 i.p.s (16.67 mm/sec), SLP: 7/16 i.p.s (11.12 mm/sec) Record/Playback Time: 8 Hrs with 160 min. type tape used in SLP mode FF/REW Time: Less than 3 min. (120 min. type tape)	○	○
	Tape Format	Tape width 1/2" (12.7 mm) high density tape	○	○
FM Radio	Band Range	87.5 ~ 108.1 MHz	○	○
DISPLAY	Picture Tube	27 inch measured diagonal 100° deflection	○	○
GENERAL	Power	Source: 120V AC ± 10%, 60 Hz ± 0.5%	○	○
		Consumption: Approx. 157 watts (power on), Approx. 7 watts (power off)	○	○
	Television System	EIA Standard (525 lines, 60 fields) NTSC Color Signal	○	○
	Operating Condition	41°F(5°C) ~ 104°F(40°C) (Temperature) 10% ~ 75% (Humidity)	○	○
	Dimension	27-1/16"(688mm) (W) X 27-15/16"(659mm) (H) X 21-5/16"(542mm) (D)	○	○
	Weight	86 lbs. (39 kg)	○	○

1. PV-M2738
2. PV-M2768/PV-M2768-K

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

Panasonic®

©1998 Matsushita-Kotobuki Electronics Industries LTD.
All rights reserved. Unauthorized copying and distribution is a violation of law.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

TABLE OF CONTENTS

SAFETY PRECAUTIONS 1-1
X-RADIATION 1-1
PREVENTION OF ESD TO ES DEVICES 1-2
OPERATION GUIDE 1-3
SERVICE NOTES 1-8
IC, Transistor and Chip Part Information 1-19

DISASSEMBLY/ASSEMBLY PROCEDURES
Disassembly/Assembly Procedures of Cabinet 2-1
Disassembly/Assembly Procedures of Mechanism 2-7
Disassembly/Assembly Procedures of Cassette Up Ass'y 2-17

ADJUSTMENT PROCEDURES
Service Fixtures and Tools 2-19
Mechanical Adjustment 2-20
Electrical Adjustment 2-26
Test Points and Control Location 2-33

SCHEMATIC DIAGRAMS
Schematic Diagram and Circuit Board Layout Notes 3-1
Capstan Stator Schematic Diagrams 3-2
Stereo Amp Schematic Diagram 3-4
Main I (Power Supply/System Contro/Servo) Schematic Diagram 3-7
Main II (Signal Process/OSD /Audio Amp) Schematic Diagram 3-11
Main III (TV Y/C Process) Schematic Diagram 3-15
Main IV (Power Supply) Schematic Diagram 3-19
UHF/VHF Tuner/TV Demodulator Schematic Diagram 3-19
TV Main / CRT / TV Power / TV Main Child Schematic Diagram 3-23
Hi-Fi Audio Schematic Diagram 3-27
TV Stereo Schematic Diagram 3-31
Audio/Video Jack Schematic Diagram 3-35
Operation I/II Schematic Diagram 3-37
Head Amp Schematic Diagram 3-39
Hi-Fi Audio/Video Head Amp Schematic Diagram 3-42
Interconnection Schematic Diagram 3-45

CIRCUIT BOARD LAYOUT
Stereo Amp C.B.A. 4-1
Main (Power Supply/Signal Process /OSD/Audio Amp/System Control /Servo/TV Y/C Process) C.B.A. 4-2
Junction C.B.A. 4-4
TV Main C.B.A. 4-6
CRT C.B.A. 4-8
Head Amp C.B.A. 4-8
TV Stereo C.B.A. 4-9
Hi-Fi Audio C.B.A. 4-9
Hi-Fi Audio/Video Head Amp C.B.A. 4-11
Operation I/II C.B.A. 4-12
TV Main Child C.B.A. 4-12
TV Power C.B.A. 4-14
Audio/Video Jack C.B.A. 4-15
Capstan Stator Unit 4-15
Signal Waveform 4-16

BLOCK DIAGRAMS
Power Supply Block Diagram 5-1
Video Signal Path Block Diagram 5-2
Audio Signal Path Block Diagram 5-3
Hi-Fi Audio Signal Path Block Diagram 5-5
Stereo Amp Block Diagram 5-8
TV Stereo/Stereo Amp Block Diagram 5-9
System Control Block Diagram 5-10
Servo Block Diagram 5-11
TV Y/C Process/OSD/CCV /TV Main Block Diagram 5-13
Troubleshooting Hints 5-16

EXPLODED VIEWS
1. Mechanism (Top) Section 6-1
2. Mechanism (Bottom) Section 6-2
3. Cassette Up Compartment Section 6-3
4. Chassis Frame Section (1) 6-4
5. Chassis Frame Section (2) 6-5
6. Packing Parts and Accessories Section 6-6

REPLACEMENT PARTS LISTS
Replacement Notes 7-1
Mechanical Replacement Parts List 7-2
Electrical Replacement Parts List 7-3

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. **IMPORTANT SAFETY NOTICE**
   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.
2. An Isolation Transformer should always be used during the servicing of Combination VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect Combination VCR from being damaged by accidental shorting that may occur during servicing.
3. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shield, and isolation R-C combinations are properly installed.
5. Before turning the receiver on, measure the resistance between B+ line and chassis ground. Connect (-) side of an ohmmeter to the B+ lines, and (+) side to chassis ground. Each line should have more resistance than specified, as follows :

B+ Line	Minimum Resistance	
130V	1K ohm	(Hot chassis ground)
27V	180 ohms	(Cold chassis ground)
17V	110 ohms	(Cold chassis ground)

6. When the TV set is not used for a long period of time, unplug the power cord from the AC outlet.
7. Potentials, as high as 32.0KV are present when this TV set is in operation. Operation of the TV set without the rear cover involves the danger of a shock hazard from the TV set power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture tube to the CRT ground of receiver before handling the tube.
8. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. For physically operated power switches, turn power on. Otherwise skip step 2.
3. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screwheads, connectors, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 M ohm and 12 M ohms. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC outlet.
   Do not use a isolation transformer for this check.
2. Connect a 1.5K ohms, 10 watts resistor, in parallel with a 0.15 micro farad capacitor, between each exposed metallic part on the set and a good earth ground , as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volt RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks. Leakage current must not exceed 1/2 milliampere. In case a measurement is outside of the limits specified, there is a possibility of shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

Hot-Check Circuit

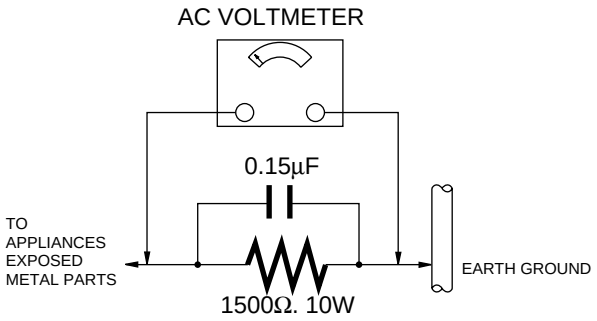


Figure 1

X-RADIATION

WARNING :

1. The potential source of X-Radiation in TV sets is the High Voltage section and the picture tube.
2. When using a picture tube test fixture for service, ensure that the fixture is capable of handling 32.0KV without causing X-Radiation.

NOTE :
It is important to use an accurate periodically calibrated high voltage meter.

1. Reduce the brightness to minimum.
2. Set the SERVICE switch to SERVICE .
3. Measure the High Voltage. The meter reading should indicate 30.0 +/- 2.0KV .
   If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
4. To prevent an X-Radiation possibly, it is essential to use the specified picture tube.

HORIZONTAL OSCILLATOR DISABLE CIRCUIT TEST

SERVICE WARNING :

The test must be made as a final check before set is returned to the customer.

1. With the rear cover removed, supply about a 120V AC power source to the set, turn on the set.
2. Set the customer controls to normal operating positions.
3. Short between TP891 and TP892 on the Main circuit board with a jumper wire. Confirm that the picture goes out of horizontal sync.
4. If this does not occur, the horizontal oscillator disable circuit is not operating. Follow the Repair Procedures of horizontal oscillator disable circuit before the set is returned to customer.

REPAIR PROCEDURES OF HORIZONTAL OSCILLATOR DISABLE CIRCUIT

1. Connect a DC voltmeter between capacitor C513 (+) on the Main circuit board and chassis ground.
2. If approximately +21.9V is not present at that point when 120V AC is applied, find the cause. Check R503, R5505, C5507, C513 and D503.
3. Carefully check above specified parts and related circuits and parts. When the circuit is repaired, try the horizontal oscillator disable circuit test again.

CIRCUIT EXPLANATION

HORIZONTAL OSCILLATOR DISABLE CIRCUIT

The positive DC voltage, supplied from the D503 cathode for monitoring high voltage, is applied to the IC5301 Pin11 through R503 and R5504. Under normal conditions, the voltage at IC5301 Pin 11 is less than approx 3V. If the high voltage at Flyback Tr Pin 5 exceeds the specified voltage, the positive DC voltage which is supplied from the D503 cathode also increases. The increased voltage is applied to IC5301 Pin11 through R503 and R5504. Due to the increased voltage at IC5301 Pin11, the horizontal oscillator frequency increases, the picture goes out of horizontal sync, the beam current decreases and the picture becomes dark in order to keep X-radiation under specification.

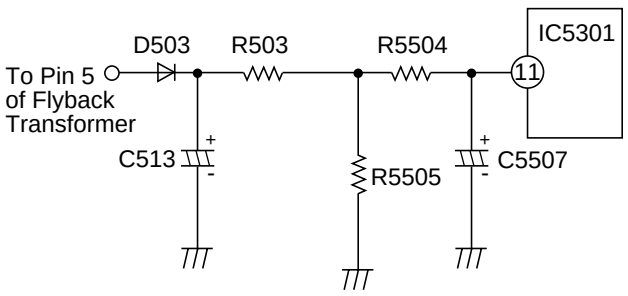


Figure 2

PREVENTION OF ELECTRO-STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors are semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION:

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

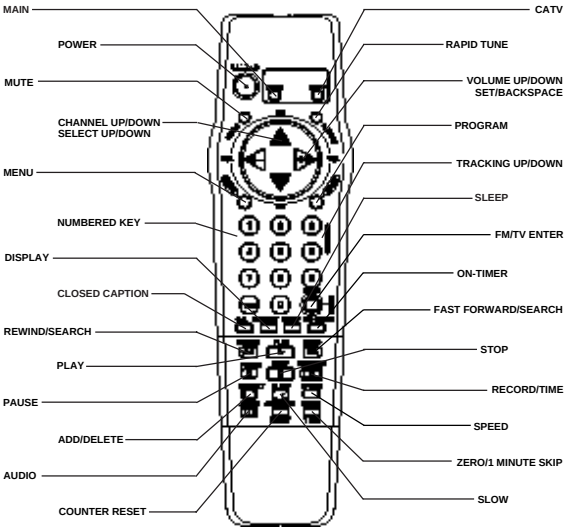
"NOTE to CATV system installer :

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical."

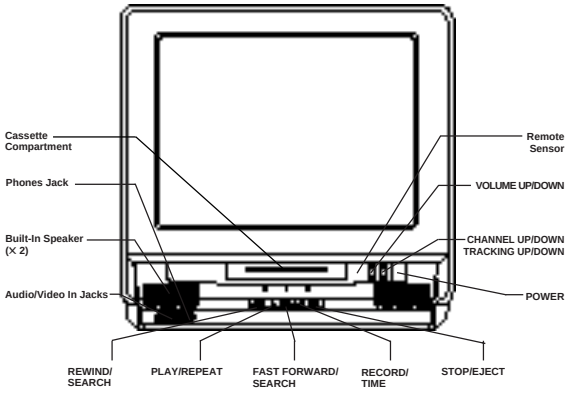
OPERATION GUIDE

Location of Controls

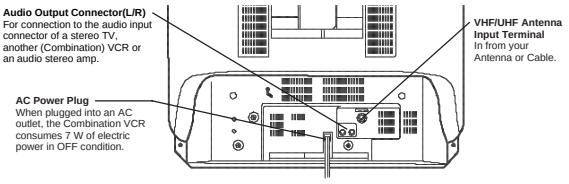
Remote Control Buttons



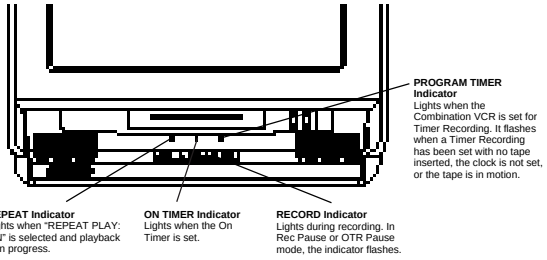
Front View of the Combination VCR



Rear View of the Combination VCR


Audio Output Connector(L/R)
For connection to the audio input connector of a stereo TV, another (Combination) VCR or an audio stereo amp.
AC Power Plug
When plugged into an AC outlet, the Combination VCR consumes 7 W of electric power in OFF condition.
VHF/UHF Antenna Input Terminal
In from your Antenna or Cable.

Indicators on the Front Panel


PROGRAM TIMER Indicator
Lights when the Combination VCR is set for Timer Recording. It flashes when a Timer Recording has been set with no tape inserted, the clock is not set, or the tape is in motion.
REPEAT Indicator
Lights when "REPEAT PLAY: ON" is selected and playback is in progress.
ON TIMER Indicator
Lights when the On Timer is set.
RECORD Indicator
Lights during recording. In Rec Pause or OTR Pause mode, the indicator flashes.

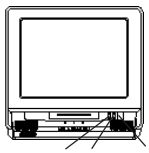
One Time Setup

***Important:**
If the remote control POWER, CH ▲▼, MENU, PROG, ON-TIMER, R-TUNE, FM/TV and ADD/DLT button does not work when pressed, press the MAIN button on the remote control and try the button again.

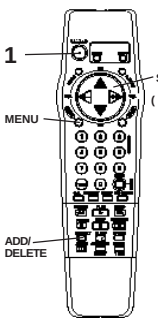
When the Combination VCR is turned on for the first time, it automatically enters the setup mode. Setup includes the following:
- Choose the language for on-screen menus and messages.
- Tell the Combination VCR how your equipment is hooked up so the Combination VCR can correctly place channels into memory.
- Get the Combination VCR ready for clock set.

Check list before you begin.

☐ Your Combination VCR is connected to an Antenna or Cable system.



2 2·3·4 1



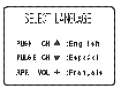
Using the ▲▼◀▶ keys

Whenever a menu or program screen is displayed, CHANNEL UP/DOWN and VOLUME UP/DOWN on the remote control function as ▲▼◀▶ only. For VOLUME UP/DOWN functions, use the buttons on the Combination VCR.

To Set Language, Channels, and Clock

1 **Press POWER*** to turn the Combination VCR on.

2 **Press CH▲▼, or VOL▶** for on screen displays in English, Spanish or French.
- If you choose the wrong language, please see the "Reset all Combination VCR Memory Functions" section.



- If you use a cable box, the cable box must be left on for auto channel set.

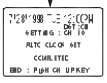
Important: If you use a cable box, turn it on and select the PBS station in your time zone.

3 **Press CH▲'** to start Channel Auto Set and Clock Auto Set.

These on-screen displays will appear in sequence.
- CH AUTO SET PROCEEDING
- CH AUTO SET COMPLETED
- AUTO CLOCK SET PROCEEDING

or

Case 1



Case 2

4 Case 1 If the displayed time is correct, press CH▲' to exit.
- This concludes one time Combination VCR setup.
- See important note at the bottom of this page.

If the displayed time and DST. are not correct...
If you happen to live close to two time zones, the Combination VCR may have recognized the PBS channel (setting channel) in the wrong time zone. Please do the following to correct the situation.

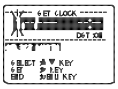
a. Make a note of the SETTING: CH number shown on-screen and press CH▲' to exit.
b. Delete the setting channel from the Combination VCR channel memory. (See the Add or Delete a Channel section on the next page.)
c. Press MENU to display the MAIN MENU.
d. Press ▲▼◀▶ to select "CLOCK," and then press MENU to display the SET CLOCK screen.
- If you use a cable box and have multiple PBS stations, tune the cable box to a different PBS station and try auto clock set again using the menu.

e. Press ▲▼ to select "AUTO SET," and then press ▶ to set and CH▲' to start Auto Clock set.

IMPORTANT NOTE FOR AUTO CLOCK SET WHEN USING CABLE BOX
- Auto clock set will be performed when the Combination VCR is turned off the first time each day. If you use a cable box and you want auto clock set to be performed, the cable box must be left on and tuned to the PBS channel at the time the Combination VCR power is turned off.
- If you use Audio/Video Jack connection between the Combination VCR and Cable Box, you must also connect the RF coaxial cable in order to use the auto clock set and channel auto set features.
- If for any reason the time is changed manually, automatic time correction will not occur.

Case 2 If AUTO CLOCK SET IS INCOMPLETE appears, please set the clock manually.

a. Press MENU to display the SET CLOCK screen.
b. Press ▲▼ to select and ▶ to enter the month, date, year, time, and DST. (Daylight Saving Time).

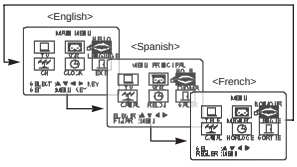


To Make Corrections,
press ◀▶ repeatedly to move the cursor to the incorrect entry and make the correction.
- "DST:ON" automatically adjusts for daylight saving time.

c. Press MENU twice to start the clock and exit the MAIN MENU.

To Change the OSD Language

1 Press MENU to display the MAIN MENU.
2 Press ▲▼◀▶ to select the language selection icon.
3 Press MENU repeatedly to change the language as shown.

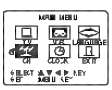


4 Press ▲▼◀▶ to select "EXIT," and then press MENU to exit the MAIN MENU.

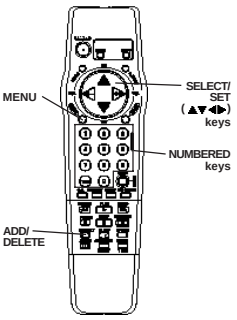
To Replace Channels in Memory

In case, you have cable installed, etc.

1 Press MENU to display the MAIN MENU.
2 Press ▲▼◀▶ to select "CH," and then press MENU to display the SET UP CHANNEL screen.



3 Press ▲▼ repeatedly to select "ANTENNA," and then press ▶ to select your antenna system ("TV" or "CATV").
4 Press ▲▼ to select "AUTO SET," and then press ▶ to start.
- To exit the SET UP CHANNEL screen, press MENU twice.

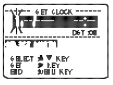


To Set or Reset the Clock

In case the clock is wrong, or a power failure occurred.

1 Press MENU to display the MAIN MENU.
2 Press ▲▼◀▶ to select "CLOCK." Then, press MENU to display the SET CLOCK screen.

3 Press ▲▼ to select "MANUAL SET," and then ▶ to display the SET CLOCK screen.



4 Please do steps **b** and **c** at the top of this page.

To Add or Delete a Channel

1 Select a channel using the NUMBERED keys to add or CH ▲▼ to delete.
2 Press ADD/DLT to add or delete the channel.

- To select a channel once it's deleted, use the NUMBERED keys.

NOTES
- This Combination VCR will accurately maintain its calendar up to Dec. 31, 2089, 11:59PM.
- Normal TV or Cable channels are automatically selected and placed in memory depending on how your Combination VCR is hooked up.

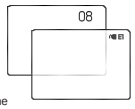
On-Screen Displays (OSD)

***Important:**
If the remote control POWER, CH ▲▼, MENU, PROG, ON-TIMER, R-TUNE, FM/TV and ADD/DLT button does not work when pressed, press the MAIN button on the remote control and try the button again.

Channel & Function Display

Whenever the channel is changed, the channel number will appear for a few seconds on-screen. (Some station names may also appear.)

When a function button is pressed (PLAY, FF, etc.), the Combination VCR mode will be displayed.

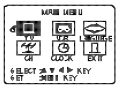


- When a recording is started, both REC and the channel number will appear together.

Menu Screen

1 **Press MENU*** to display the MAIN MENU.

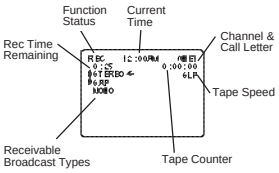
2 **Press ▲▼◀▶ and MENU** to make your selection.



- To get the most from each feature, please read the Operation Manual before attempting any operation.

VCR Status & Clock Display

Press DISPLAY to display and remove the overlay shown below.



Blank Tape/ No Video Signal Indication

When a blank section of tape comes up in Play mode, or the selected channel has no broadcast signal, the TV screen will turn a solid blue.

Warning and Instruction Displays

These displays will alert you of a missed operation or provide further instructions.

If no active channels are found for CHANNEL MEMORY...

If you attempt to set or review a Timer Recording or set the On-Timer and the Clock is not set...

If you press REC on the remote control or the Combination VCR, and a cassette is inserted with no record tab...

If you press STOP during a Timer Recording...

If you press PLAY, FF, REW, or REC on the remote control or the Combination VCR without a cassette inserted...

If the Combination VCR is not in Stop mode or a cassette with record tab is not inserted two minutes before a Timer Recording is about to begin...

If head cleaning becomes necessary while playing back a tape...

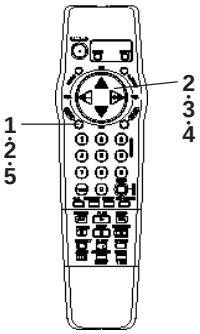
If you press a function button other than STOP/EJECT or POWER while the Combination VCR is in VCR Lock mode...

Audio/Picture Adjustment

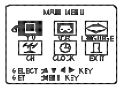
***Important:**
If the remote control POWER, CH ▲▼, MENU, PROG, ON-TIMER, R-TUNE, FM/TV and ADD/DLT button does not work when pressed, press the MAIN button on the remote control and try the button again.

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.

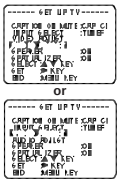


1 **Press MENU*** to display the MAIN MENU.

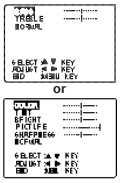


2 **Press ▲▼◀▶** to select "TV," **and then press MENU** to display the SET UP TV screen.

3 **Press ▲▼** to select "AUDIO ADJUST" or "VIDEO ADJUST" **and then press ▶** to display the AUDIO ADJUST or VIDEO ADJUST screen.



4 **Press ▲▼** repeatedly to select the desired adjust item, **and then press ◀▶** to adjust. (See description below left.)



Audio Adjustment

BASS Control
To adjust the intensity of low frequency sound.

TREBLE Control
To adjust the intensity of high frequency sound.

- The levels set here do not affect other audio equipment when connected to the Audio Output L/R Connector.

Picture Adjustment

COLOR Control
To adjust the intensity of the color.

TINT Control
To adjust for the most natural fleshtones.

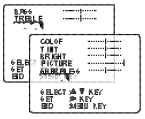
BRIGHT Control
To adjust the brightness of the picture.

PICTURE Control
To adjust the intensity of the picture by adjusting contrast and color level at the same time and in the proper balance.

SHARPNESS Control
To adjust the sharpness of the picture.

To Reset Audio/Picture Controls to the Factory Setting

Press ▲▼ and ▶ to select and set "NORMAL." All controls return to their factory settings.



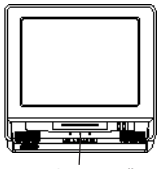
5 **Press MENU three times** to return to the normal screen.

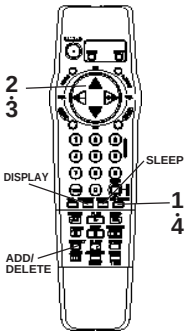
- If no button is pressed within 5 minutes, the video adjust overlay disappears.

TV Timer Features

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.





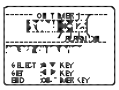
On-Timer with Alarm Feature

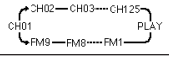
The Combination VCR can be set to automatically power on in one of 3 modes (TV, Playback, or FM radio). You can also combine the On-Timer with a one minute alarm that gradually increases in volume.

1 **Press ON-TIMER** to display the ON TIMER screen.

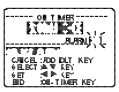
2 **Press ▲▼** to select and **▶** to fix the On-Timer time and also to choose the On-Timer mode (TV, PLAY, or FM radio). See the **▲▼** selection order shown below.

- Make sure a tape is inserted if Playback mode is selected.
- See "FM Radio Feature" for instructions on how to preset FM stations.





3 **Press ▲▼** to select alarm "ON" or "OFF."



When "ON" is selected,
an alarm will gradually increase in volume for one minute or until cancelled by pressing any button on the remote or Combination VCR (including Volume UP/DOWN). When the alarm sound stops, the sound of the mode you selected will ensue.

To Make Corrections,
use **▲▼** and **◀▶** to move back and correct as necessary.

4 **Press ON-TIMER** to set the On Timer. This screen will appear for about 5 seconds.

- The ON TIMER indicator lights on the front panel.

To cancel,
press ON-TIMER to redisplay the screen in step 3. Then, press ADD/DLT to clear the time ("6" is flashing). Now, press ON-TIMER to end. "ON TIMER END" appears on-screen for a few seconds.

NOTE: If no button on the remote or Combination VCR (including a button used to turn off the alarm) is pressed within 60 minutes after the Combination VCR turns itself on, it will turn itself back off.

Set the Sleep Timer

The Combination VCR can be set for auto power off.

Press SLEEP repeatedly to set the sleep timer.

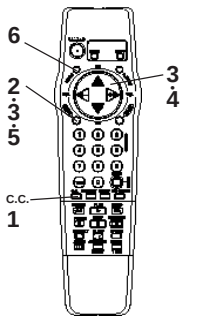
- Each press will change the time in the order shown at right.
- If you press DISPLAY with the SLEEP TIMER set, the remaining time will appear on-screen.

To Cancel, press SLEEP repeatedly until "SLEEP TIMER 00" appears.

Closed Caption System

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.



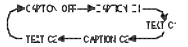
***Important:**
If the remote control POWER, CH ▲▼, MENU, PROG, ON-TIMER, R-TUNE, FM/TV and ADD/DLT button does not work when pressed, press the MAIN button on the remote control and try the button again.

Closed Caption Mode Feature

This multi-use system not only allows the hearing impaired to enjoy selected programs, but also makes useful information from TV stations available to everyone. At first, read through the different closed caption options below left.

Press C.C. repeatedly to select the desired caption mode. (See "Caption Mode description" below left).

- Selected mode is displayed on screen.
- Each press C.C. will change the display as shown at right.



Closed Caption Modes From which to Choose

Caption Mode: CAPTION C1 or C2
A narration of selected TV programs will be displayed on the screen. Check your TV program listings for C.C. (Closed Caption) broadcasts.

Caption Mode: TEXT C1 or C2
The lower half of the screen will be blocked out. When the TV station broadcasts text, such as program listings, special information, etc., it will appear in this space.

Caption Mode: OFF
Narration will not appear on the screen even if a closed caption or text broadcast is received.

Note: The closed caption or text signal may be broadcast over C1, C2, or both. Also, text contents can vary so you may wish to try different settings.

Recording and Playing Back a Closed Caption/Text Program

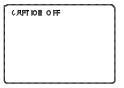
Record: Your Combination VCR will automatically record the Closed Caption/Text signal. Just follow normal recording operation.

Playback: To display the Closed Caption narration or Text during playback, simply press C.C. until the desired caption mode is displayed.

Caption On Mute Feature

This feature allows you to turn off the sound and, at the same time, display Closed Caption narration. Perfect for when you need silence, but would like to continue watching the program.

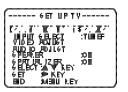
1 **Press C.C.** until CAPTION OFF is displayed on screen.



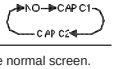
2 **Press MENU*** to display the MAIN MENU.

3 **Press ▲▼◀▶** to select "TV," **and then press MENU** to display the SET UP TV screen.

4 **Press ▶** repeatedly to select the desired caption on mute mode.



- Each press of **▶** will change the display as shown at right.
- The caption may be broadcast over CAP C1 or C2.



5 **Press MENU twice** to return to the normal screen.

6 **Press MUTE** to mute the sound. The closed caption narration (if available) is displayed on the screen.

- Press MUTE again to resume normal sound and picture.
- Not all programs have Closed Caption information, therefore, narration may not be displayed.

FM Radio

The Combination VCR has an FM radio with built-in antenna, 9 station preset, and a band range of 87.5–108.1 MHz. You can even set the On-Timer to wake up to your favorite radio station.

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.

FM Radio Feature Setup

a Press FM/TV on the remote control to select FM Radio mode.

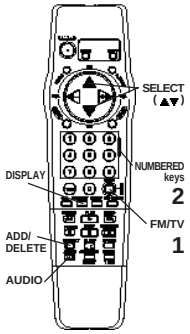
b In FM Radio mode, press a NUMBERED key (1–9).

c Press ▲▼ to select the desired radio station. (Each press changes the frequency by 200 KHz.)

d Press ADD/DLT to memorize the desired station.

- To preset other stations, repeat steps **b**–**d**.

To Make Corrections,
press the NUMBERED key to select the memorized number, and then repeat steps **b**–**d** to change the memorized station.



Using the FM Radio

1 Press FM/TV on the remote control to select FM Radio mode.

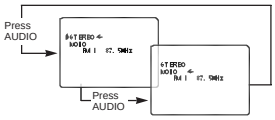
2 Press a NUMBERED key (1–9) to select a preset station (see steps **a**–**d** above).

To cancel FM Radio mode, press FM/TV again to return to the normal screen.

To Select Audio Mode for FM Radio

Press AUDIO in FM Radio mode to select "STEREO" or "MONO." An arrow points to the current mode.

< Example >



NOTES

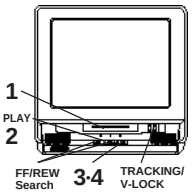
- You can not record FM radio stations onto a Video cassette tape.
- You may get improved FM reception for some stations by repositioning the Combination VCR.
- You can not select the FM Radio mode during playback or record, or while a blue back screen (MENU, PROG, and ON-TIMER) is displayed.

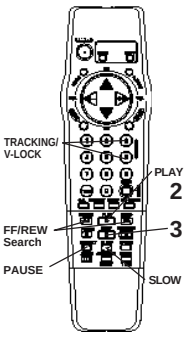
Playback a Tape

***Important:**
If the remote control POWER, CH ▲▼, MENU, PROG, ON-TIMER, R-TUNE, FM/TV and ADD/DLT button does not work when pressed, press the MAIN button on the remote control and try the button again.

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.





Caution:
Please inspect your cassette tapes and remove any loose or peeling labels to prevent them from becoming jammed in your unit.

1 Insert a cassette.
- The Combination VCR power comes on automatically.

2 Press PLAY on the remote control or Combination VCR to start playback.
- Playback begins automatically if cassette has no record tab.

3 Press STOP on the remote control or Combination VCR to stop playback.
- To rewind the tape, press REW.

4 Press STOP/EJECT on the Combination VCR to eject the cassette.
- You may eject a cassette with power on or off.

To Find a Particular Scene During Playback

Press REW or FF on the remote control or Combination VCR to quickly locate a scene.
- Search speed for SP mode tapes is 7 times and SLP mode tapes 21 times the normal speed.
- Some noise bars will appear during search.

Special Effects During Playback

These features work best in SP or SLP mode. The sound will be muted.

Slow Motion Playback
Press SLOW to start slow motion playback. Press PLAY or SLOW to release.

Still (Freeze) Frame Picture
Press PAUSE to freeze and release the picture.
- To reduce picture noise, first press SLOW. Next, use the 3 or 6 NUMBERED key on the remote control or CH▲▼ on the Combination VCR to clear up the picture. Now, press PAUSE.

Frame by Frame Advance
While in Still mode, press SLOW repeatedly or hold down to advance the still picture one frame at a time. Press PAUSE or PLAY to release.

(After the Combination VCR is in Still or Slow mode for 3 minutes, it will switch to the Stop mode automatically to protect the tape and the video head.)

Features for a Quality Picture

Digital Auto Tracking
This feature continuously analyzes the signal and adjusts for optimum picture quality.

Manual Tracking Control
Use during Playback and Slow Motion mode to reduce picture noise. Press the 3 or 6 NUMBERED key on the remote control or CH▲▼ on the Combination VCR until the picture clears up.
To return to Auto Tracking, press POWER off and then on again.

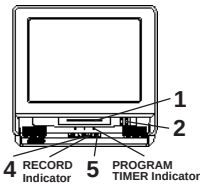
V-Lock Control
In Still mode, the 3 or 6 NUMBERED key on the remote control or CH ▲▼ on the Combination VCR operate as a V-Lock control to reduce jitter. Press one of these keys until the picture is stabilized.

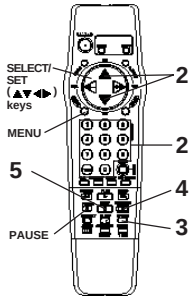
PanaBlack™ Picture Tube
This Combination VCR uses a PanaBlack™ picture tube for better color reproduction and picture contrast.

Record On a Tape

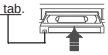
Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.





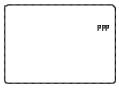
1 Insert a cassette with record tab.
- The Combination VCR power comes on automatically.



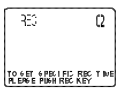
2 Press CH▲▼, or NUMBERED keys on the remote control to select a channel.
- Or, press CH▲▼ on the Combination VCR.
- To record from an outside source, press CH▲▼ to select LINE input (see bottom of this page).

3 Press SPEED repeatedly until the desired tape speed is displayed.

SP = Standard Play
LP = Long Play
SLP = Super Long Play



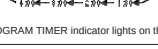
4 Press REC/TIME on the remote control to start recording.
- Or, press REC/TIME on the Combination VCR.
- To edit out unwanted portions, press PAUSE to pause the recording in progress. To release, press PAUSE again.
- You can not view another channel during recording.



One Touch Timer Recording (OTR)

The Combination VCR stops recording at a preset time.

In step 4, press REC/TIME repeatedly to set the length of the recording. Each press will change the time as shown.



- The PROGRAM TIMER indicator lights on the front panel.

5 Press STOP on the remote control to stop recording.
- Or, press STOP/EJECT on the Combination VCR.

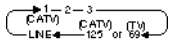
NOTES

- While it is possible to change the tape speed when you are recording, there will be some distortion on the tape where the change occurred.
- The remaining recording time of an OTR can be displayed by pressing DISPLAY.
- After the Combination VCR has been in Rec Pause mode for 5 minutes, it will stop automatically to protect the tape and video head.

Selecting the Input Mode

You can select the Input Mode in either of the following ways.

■ Press CH▲▼. The display will change in the order below.



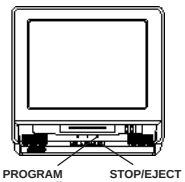
■ **a** Press MENU to display the MAIN MENU.
b Press ▲▼◀▶ to select "TV," and then press MENU to display the SET UP TV screen.
c Press ▲▼ to select "INPUT SELECT," and then press ▶ repeatedly to select "TUNER" or "LINE."

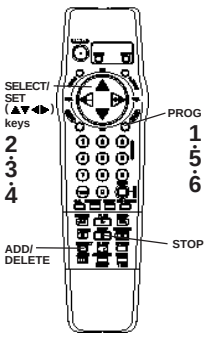
Timer Recording

Your Combination VCR can be set up to do a recording while you are away or otherwise occupied. Up to 8 programs can be placed in memory. You can choose to record one time, daily, or weekly.

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.
- ☐ The clock is set.
- ☐ The tape is long enough.
- ☐ The record tab is in place.





***Important:**
If the remote control POWER, CH ▲▼, MENU, PROG, ON-TIMER, R-TUNE, FM/TV and ADD/DLT button does not work when pressed, press the MAIN button on the remote control and try the button again.

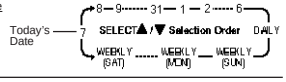
1 Press PROG* to display the SET PROGRAM screen.

2 Press ▲▼ to select "TIMER PROGRAM" **and then press ▶** to display the program screen.
- If a program is already in memory, press ▲▼ repeatedly, and then ▶ to select an unused program number.

3 Press ▲▼ and ▶ to select and set one of the following as the DATE:

1–31 = One day of the month
DAILY = Same time MON – FRI
WEEKLY SUN–SAT = Same time once a week

Example

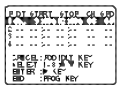


4 Press ▲▼ and ▶ to select and set each of the remaining items as follows.

Remaining Items:
- START time
- STOP time
- CH(annel) number, or LINE for outside source recording
- Speed (SP, LP, SLP)

To Make Corrections
Repeatedly press ▶ or ◀ to move the cursor to the right or left, and then make the correction.

5 Press PROG to end the program.
- This screen appears for confirmation.



To Enter More Programs
Press ▲▼ and ▶ to select and set a blank program number, and then repeat steps 3 and 4.

6 Press PROG twice to exit this mode and return to the normal screen.
- The PROGRAM TIMER indicator lights on the front panel.
- If you're using a cable box, make sure that it is tuned to the desired channel and the power is left on for timer recording.

Two minutes before the Timer Recording starts, "TIMER REC WILL START SOON" will appear on-screen.

NOTES

- If "PLEASE PREPARE FOR TIMER REC" appears and/or the PROGRAM TIMER indicator flashes, check that a cassette with record tab is loaded and the Combination VCR is in Stop mode.
- If the start times of two programs overlap, the lower numbered program will have priority.
- If the start time for a timer recording comes up during a normal recording or One Touch Recording (page 17), the timer recording will not be performed.
- If there is a power interruption of more than one minute, the recording may not be performed or continue.
- If "INCOMPLETE" appears after all items have been set, check all entries and make necessary corrections.

Timer Recording

Cancel a Timer Recording:
(Recording is in progress)

Hold down STOP for a few seconds to cancel the Timer Recording.

- Any future daily or weekly recordings will be performed as programmed.

Replace Program Contents:
(Recording is not in progress)

1 Do steps 1 and 2 on previous page. All currently set programs will be displayed on-screen.

2 Press ▲▼ repeatedly to select the desired program, and then press ▶ to display the settings.

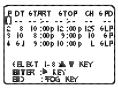
3 Press ▲▼ repeatedly to select, and then press ▶ to enter replacement information.

4 Press PROG three times to exit this mode and return to the normal TV screen.

Review or Clear Program Contents:
(Recording is not in progress)

a Do steps 1 and 2 on previous page. All currently set programs will be displayed on-screen.

b Press ▲▼ repeatedly to select the desired program number.



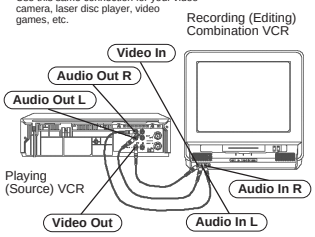
c Press the ADD/DLT if you want to clear the program.

d Press PROG twice to exit this mode and return to the normal TV screen.

Copying Your Tapes (Dubbing)

Connections you'll need to make.

- Use this same connection for your video camera, laser disc player, video games, etc.



1 Insert a pre-recorded tape into the Playing (source) VCR.

2 Insert a blank tape with record tab into the Recording (editing) Combination VCR.

3 Select "LINE" as the input on the Combination VCR.

- See "Selecting the Input Mode" section.

4 Press PLAY on the VCR. Then, **press PAUSE** when the tape reaches the point at which you want to start copying.

5 Press REC on the Combination VCR, **and then immediately press PAUSE** on the remote control.

6 Press PAUSE on both units at the same time to begin copying.

You can edit out unwanted parts of the original recording by using PAUSE (on the Recording unit) while copying is in progress.

7 Press STOP on both units to stop copying.

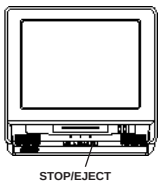
Caution:
Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.

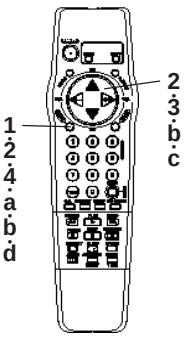
Special VCR Features

***Important:**
If the remote control POWER, CH ▲▼, MENU, PROG, ON-TIMER, R-TUNE, FM/TV and ADD/DLT button does not work when pressed, press the MAIN button on the remote control and try the button again.

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.

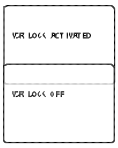




VCR Lock Feature

When activated, this feature prohibits all operations except for timer recording and tape eject. This feature maybe used to keep young children from operating the Combination VCR.

Hold down STOP/EJECT on the Combination VCR **for 7 seconds** during Stop or Power OFF mode.



To Cancel the VCR Lock feature,
Hold down STOP/EJECT on the Combination VCR for 7 seconds again during Stop or Power OFF mode.

- VCR Lock mode is cancelled automatically after 24 hours as long as the clock is set.
- This feature cannot be activated or cancelled when a timer or one touch recording is in progress.

NOTE: The on screen message will only be displayed on your TV screen if the VCR Lock feature is activated in the Power on mode.

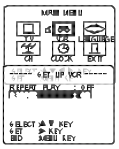
Warning Beeper Feature

When you select BEEPER ON, a short warning will sound each time an invalid entry or incomplete operation is made.

1 Press MENU* to display the MAIN MENU.

2 Press ▲▼◀▶ to select "VCR," **and then press MENU** to display the SET UP VCR screen.

3 Press ▲▼ to select "BEEPER," **and then press ▶** to select "ON" or "OFF."



4 Press MENU twice to exit this screen.

Speaker On/Off System

Allows you to turn off the speaker of the Combination VCR when it is connected to external audio equipment.

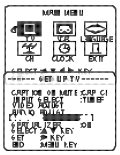
a Press MENU to display the MAIN MENU.

b Press ▲▼◀▶ to select "TV,"**and then press MENU** to display the SET UP TV screen.

c Press ▲▼ to select "SPEAKER," **and then press ▶** to select "ON" or "OFF."

d Press MENU twice to exit this screen.

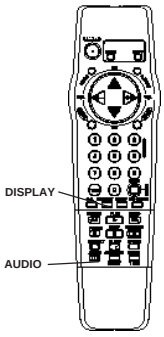
- In SPEAKER OFF condition, the mute and volume Up/Down buttons do not function. The screen at right appears if these buttons are pressed in SPEAKER OFF mode.



MTS Broadcast/VHS Hi-Fi Stereo System

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.



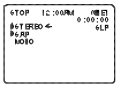
Equipped with dbx®-TV Noise Reduction for true MTS reproduction.
dbx®-TV Noise Reduction is required for good stereo separation and audio fidelity.
dbx® is a registered trademark, and is licensed by dbx® Technology Licensing.

Receivable Broadcast Types

The following are possible broadcast types with their accompanying on-screen displays. The signal being received is indicated with an "▶" mark while the selected audio mode is indicated with an arrow. To change the audio mode for these broadcasts, follow the "Select Audio Mode for TV Viewing" section (below).

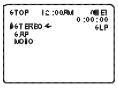
Press DISPLAY to display the broadcast signal currently being received and the selected audio mode.

MTS Stereo and SAP broadcast
Multi-channel Television Sound Stereo (main language) and Secondary Audio Program (sub language) broadcasts are being received simultaneously. Select the STEREO or SAP audio mode as desired.

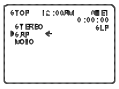


MTS Stereo broadcast
Multi-channel Television Sound Stereo broadcast is being received. Select the STEREO audio mode.

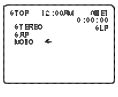
- If a stereo broadcast is weak and the display flickers, you may want to select the MONO audio mode for better results.



SAP broadcast
Secondary Audio Program (sub language) broadcast is being received. Select SAP audio mode for the sub language.



MONO broadcast
Normal monaural sound broadcast is being received.

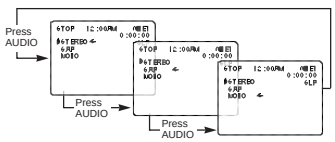


Select Audio Mode for TV Viewing

Press AUDIO to select the desired audio mode as described above. (Arrow shows selection.)

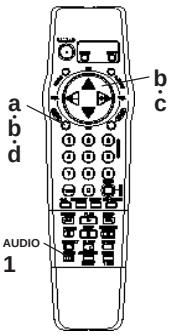
- Each press of AUDIO will change the audio mode as shown below.

< Example >



With the proper audio mode setting, your Combination VCR can:

- record and playback an MTS stereo broadcast (main language) in stereo Hi-Fi. Stereo sound is recorded on the left and right audio tracks and on the video portion of a tape.
- record and playback a monaural broadcast (main language) or an SAP (Sound Audio Program, usually in a second language) on the Hi-Fi tracks for better quality monaural sound.
- playback non-Hi-Fi tapes in monaural.



Select Audio Mode for Recording

Select the type of broadcast and sound track you wish to record.

A Do the operation of "Select Audio Mode for TV Viewing" section on previous page.

- Your recording is always performed according to the audio mode you selected in the "Select Audio Mode for TV Viewing" section on previous page.

B Do a recording. See the "Record On a Tape" section.

***Important:**
If the remote control POWER, CH ▲▼, MENU, PROG, ON-TIMER, R-TUNE, FM/TV and ADD/DLT button does not work when pressed, press the MAIN button on the remote control and try the button again.

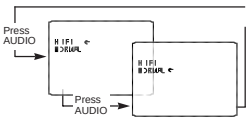
Select Audio Mode for Playback

Select the type of sound track you desire for playback.

1 Press AUDIO repeatedly (each push within 5 seconds) to select the desired audio mode (HIFI/NORMAL).

- Please select HIFI to listen to your stereo recordings with stereo sound or NORMAL for monaural sound.

< Example >



- This screen appears when you press AUDIO during playback.

2 Playback the tape.
See the "Playback a Tape" section.

Spatializer Feature

This feature allows you to enhance the stereo sound so that it seems to completely surround you.

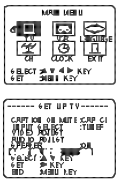
NOTE: For playback, tapes must be recorded in Hi-Fi stereo. For TV viewing, programs must be broadcast in stereo.

a Press MENU* to display the MAIN MENU.

b Press ▲▼◀▶ to select "VCR," **and then press MENU** to display the SET UP VCR screen.

c Press ▲▼ to select "SPATIALIZER," **and then press ▶** to select "ON" or "OFF."

d Press MENU twice to exit this screen.



- Portions of this product manufactured under a license from Desper Products, Inc. SPATIALIZER, and the circle-in-square device are trademarks owned by Desper Products, Inc.

NOTES

- When purchasing or renting prerecorded tapes, remember that only those recorded in Hi-Fi stereo will play back with true stereo sound. Standard stereo tapes will play back with monaural sound.
- In order to listen to Hi-Fi stereo playback, the Combination VCR AUDIO (L/R) jacks must be connected to a stereo amp and speakers.
- There may be a difference in audio level between Hi-Fi and normal audio playback.

VCR Plus+ Setup

***Important:**
If the remote control POWER, CH ▲▼, MENU, PROG, ON-TIMER, R-TUNE, FM/TV and ADD/DLT button does not work when pressed, press the MAIN button on the remote control and try the button again.

VCR Plus+ programming allows you to set most items of a timer recording by simply entering a special code (PlusCode) found in *TV GUIDE* magazine as well as the TV listings in selected newspapers. In order for your Combination VCR to do a VCR Plus+ recording, or a timer recording of cable stations, some setup is required.

At first, choose your Connection Type.
(Then, follow the instructions under the diagram.)

Connection Type A

<CABLE BOX → COMBINATION VCR>

If your system looks like this, do the following.

1. **Complete the Cable Box Setup section at right.**
2. **Go directly for VCR Plus+ Programming.**

Connection Type B

<CABLE or ANTENNA → COMBINATION VCR>

If your system looks like this, do the following.

1. **Skip the Cable Box Setup section at right.**
2. **Complete the VCR Plus+ Channel Setup section.**
3. **Turn to VCR Plus+ Programming.**

VCR Plus+ and PlusCode are trademarks of Gemstar Development Corporation.
The VCR Plus+ system is manufactured under license from Gemstar Development Corporation.

Cable Box Setup

For Connection Type A (see left) only

1 **Press MENU*** to display the MAIN MENU.

2 **Press ▲▼◀▶** to select CH, **and then press MENU** to display the SET UP CHANNEL screen.

3 **Press ▲▼** to select CABLE BOX SET UP, **and then ▶** to set.

4 **Press ▲▼** and to select YES or NO, **and then press ▶** to set.

Select YES if all channels are received via the cable box (connection A at left). Then, go to step 5.

Select NO if your cable connection resembles B at left. Press MENU to exit.

5 **Press ▲▼** to select Cable box output channel number, **and then press ▶** to enter.

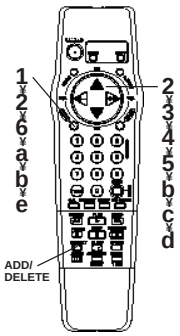
- If necessary, refer to your cable box manual.
- If you are using Audio/Video jack connection for your cable box, select and set VIDEO OUT as the output channel.

¥ This display appears for 5 seconds. (Channel shown is example only)

6 **Press MENU twice** to end the setup and return to the normal screen.

Go directly to VCR Plus+ Programming.

In order for the Combination VCR to read the VCR Plus+ code, some setup is required. A Guide (VCR Plus+) channel number is assigned to each local broadcast and cable station. Because this number sometimes differs from the channel your TV receives the station on, it is necessary to program the Combination VCR with local channel information.



Channel Setup Preparations

NOTE:
Complete the steps on this page if your Combination VCR hook-up resembles B

Prepare a list like the example below.
This list will help you smoothly enter the information needed in step d at right.

You will need the following to complete the list:

- A line up of normal and/or cable stations you receive along with the channel numbers your TV receives them on. A cable channel line-up chart is supplied by your cable company.
- A list of Guide (VCR Plus+) channel numbers assigned to the stations you receive. This list is available in TV Guide and the TV listings found in selected newspapers.

1 Make a chart with 3 columns like the example below. In the left column, fill in the name or call letters of the stations you receive.
2 In the middle column, fill in each station s assigned Guide (VCR Plus+) number found in TV Guide, newspapers, etc.
3 In the right column, fill in the channel number that your TV receives the station on from your channel line-up.

< EXAMPLE ONLY >

Broadcast or Cable Station Name	Assigned Guide (VCR Plus+) Channel No.	Channel No. your TV receives the station on
HBO	33	15
Nickelodeon	38	20
CBS	34	04
FOX	11	

VCR Plus+ Channel Setup

For Connection Type B only

¥ Before you begin, complete the Channel Setup Preparations below left.

Important Note:
If your Combination VCR Connection type changes, from Type A to B, repeat step 4 of previous page, select NO.

a **Press MENU** to display the MAIN MENU.

b **Press ▲▼◀▶** to select CH, **and then press MENU** to display the SET UP CHANNEL screen.

c **Press ▲▼** to select VCR Plus+ CH SET UP, **and then press ▶** to display the VCR Plus+ CH SET UP screen.

IMPORTANT NOTE:
For step d , use the list you prepared at left. You may leave lines blank if you don t receive that station, or if the GUIDE CH number and the CATV (or TV) CH numbers are the same.

d **Press ▶** to move the shaded area to the right side.

Then, press ▲▼ to change the CATV (or TV) CH number.

Next, press ◀ to set the CATV (or TV) CH number.

Now, press ▲▼ to continue. Repeat this operation until the list is complete.

To Make Corrections
Press ▲▼ and ▶ to select the incorrect CATV or TV CH number.
Then, press ▲▼ to change, or ADD/DLT to delete the channel.

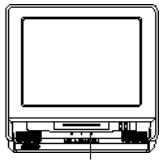
e **Press MENU three times** to exit the VCR Plus+ CH SET UP mode.

NOTES
- Make each entry within 5 minutes or the Combination VCR will leave this mode.
- Once local channels have been programmed, they will stay in memory, even in the case of a power failure.

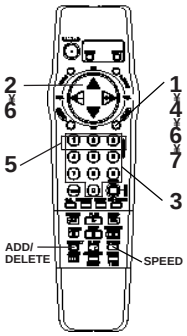
VCR Plus+ Programming

Before you begin, make sure...

☐ The clock is set.
☐ VCR Plus+ Setup is complete.



PROGRAM TIMER Indicator



Use normal Timer Recording steps if:

- the PlusCode for a program is not listed.
- you anticipate the program, such as a sporting event, to run over the scheduled stop time.
- cancel a timer recording in progress.
- replace program contents.
- review or clear program contents once set.

***Important:**
If the remote control POWER, CH ▲▼, MENU, PROG, ON-TIMER, R-TUNE, FM/TV and ADD/DLT button does not work when pressed, press the MAIN button on the remote control and try the button again.

1 **Press PROG*** to display the SET PROGRAM screen.

2 **Press ▲▼** to select VCR Plus+ PROGRAM **and then press ▶** to display the Plus Code screen.

3 **Press NUMBERED keys** to enter the PlusCode number from your local TV listings.

To Make Corrections
Press ◀ repeatedly to delete the PlusCode number. Then, enter the correct number.

4 **Press PROG** to lock in your program.

5 **Press the 1, 2, or 3 key** to select the program type.

To Change the Recording Speed
Press SPEED for SP, LP, SLP.

To Chancel Program Contents
Press ADD/DLT.

- If you use connection type A , the channel shown in this on-screen display will always be the cable box output channel number.

6 **Press PROG** to end the program.
- This screen appears for confirmation.

7 **Press PROG twice** to exit this mode and return to the normal screen.

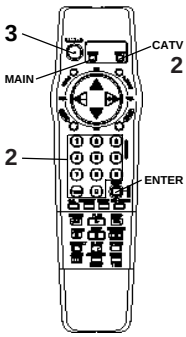
- The PROGRAM TIMER indicator lights on the front panel.
- If you re using a cable box, make sure that it is tuned to the desired channel and the power is left on for timer recording.

¥ This display appears if you use a cable box.

NOTES
- You can obtain unlisted PlusCode numbers by calling 1-900-454-7587. Call costs approximately $.95 per minute.
- Avoid overlapping program times.
- An on-screen display will indicate if an invalid PlusCode number has been entered or when all timer programs are full.

Cable Box Universal Remote Control Operation

The Remote Control may be set up to control some of the functions on your Cable box.



NOTE
The remote control is designed to control the brands listed. However, **it will not operate all Cable boxes made by these manufactures.** If you get no results, your particular product brand cannot be controlled by this remote.

Universal Remote Control Setup

1 **Find your Cable box brand code number** from the chart at the bottom of this page.

2 **While holding down CATV, use the NUMBERED keys** to enter your Cable box brand code number.
- For code numbers 100 or greater, first press the 100 key, and then enter the remaining digit. E.g., for 102, press 100, then press 2.

3 To confirm that the correct code was entered, **press POWER** to turn your Cable box on/off.

4 **Try each of the functions listed under Set to CATV : in the following section.**
- Due to changes in infra-red commands used by some manufactures, more than one code may be listed for some Cable box brands. If your Cable box does not respond to the first code, please try entering the next code.

Using the Universal Remote Control

Once the remote control has been properly setup, you can select MAIN or CATV mode depending on which functions you wish to control. (See below.)

Press MAIN or CATV on the remote control to select the desired mode. (See below for a list of controllable functions for each mode.)

Set to MAIN:
- All TV and VCR functions

Set to CATV:
- Power
- Numbered keys
- Channel Up/Down
- ENTER
- Basic VCR functions, e.g. PLAY, REC, etc.

NOTES:
- In CATV mode, it may be necessary to press ENTER after pressing the NUMBERED keys for channel selection.
- In CATV mode, ADD/DLT, MENU, PROG, ON-TIMER, R-TUNE and FM/TV are not available. Press MAIN to use these functions.
- Depending on your Cable box brand, some of the functions listed may not be remote controllable.

Cable Box Brand Code Numbers

Archer 01, 29, 44, 88, 91
Cableview ..04, 30, 42, 44, 52, 63, 85, 88
Citizen 04, 30, 42, 44, 52, 63, 85, 88
Curtis 08, 09, 56, 61, 87, 90
Diamond 01, 29, 44, 88, 91
Drake 37, 67, 71
Eagle 13, 20, 22, 26, 40, 58, 62, 98
Eastern 28
GC Brand ..04, 30, 42, 44, 52, 63, 85, 88
Gemini 04, 85
General Electric 57
General Instruments 01, 02, 03, 04, 34, 55, 83, 85, 91, 93, 95
Hamlin 14, 15, 28, 41, 97, 100, 102
Jerrold 01, 02, 03, 04, 34, 55, 83, 85, 91, 93, 95
Macom 31, 79
Magnavox 25, 26
Matsushita 16, 17, 101
Movietime ..29, 32, 38, 39, 40, 42, 44, 88
NSC 32, 38, 40
Oak 10, 11, 46, 99
Panasonic 16, 17, 101
Philips 13, 20, 23, 24, 96
Pioneer 05, 06, 78
Pulsar 04, 30, 42, 44, 52, 63, 85, 88
Radio Shack 44
RCA 16, 17, 101
Realistic 44, 51, 88
Regal 14, 41
Regency 28
Rembran 29, 32, 39, 42, 44, 88
Salora 68, 72
Samsung 32, 40, 42, 78, 94
Scientific Atlanta 08, 09, 56, 61, 87, 90
Sheritech 27
SL Marx 32, 40, 42, 78, 94
Sprucer 16, 17, 101
Stargate 04, 30, 32, 40, 42, 44, 52, 63, 78, 85, 88, 94
Sylvania 19
Teknika 74
Telecaption 77, 92
Teleview 32, 40, 42, 78, 94
Texscan 18, 19
Tocom 01, 33, 34, 42, 48, 49, 91
Toshiba 36
Uniden Satellite 65, 69
Unika 01, 29, 44, 88, 91
Universal 42, 43, 44, 52, 63, 88
Viewstar..13, 20, 22, 26, 40, 58, 62, 98
Videoway 07, 23, 50
Vid Tech 64
Vidter 64
Zenith 07, 23, 50

SERVICE NOTES

SIMPLIFIED FAULT FINDING DATA

Simplified Self-Diagnostic System facilitates finding the cause of the fault. 4 digit fault code will be displayed on TV screen. The Simplified Fault finding data is stored in the Memory IC (IC6004). This data is cleared after it is displayed and then, the POWER button is pressed back on.

1. With power turned off, press FF and REW buttons on unit together for over 3 seconds.

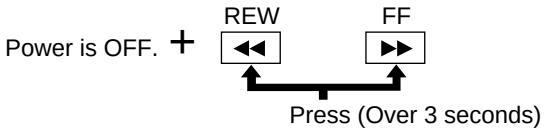


Fig. 1-1

2. TV power goes on and the unit goes into service mode. Fault code indication (4 digit number) will be displayed.

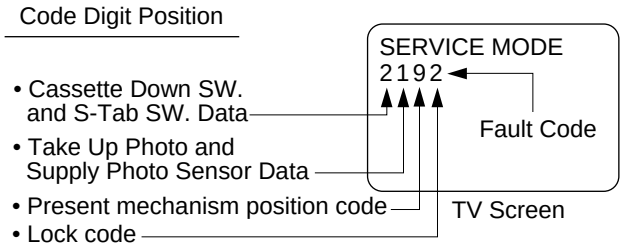
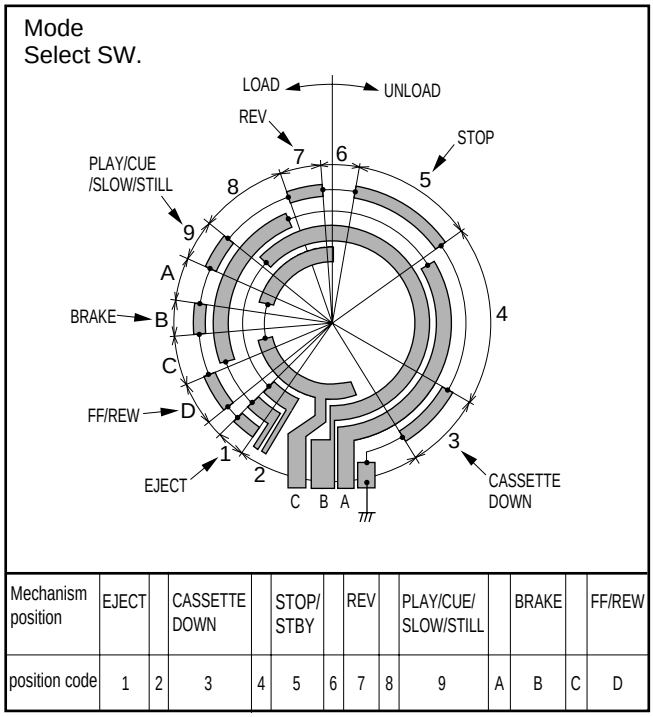


Fig. 1-2

Explanation of Codes	Code No.			
S-Tab SW. Data • S-Tab SW. is off. • S-Tab SW. is on.	1 2			
Take Up and Supply Photo Sensor Data • No light detected at either sensor. • Take Up Photo Sensor detected at beginning of tape. • Supply Photo Sensor detected at end of tape. • Light detected at both sensors.		1 2 3 4		
Present Mechanism Position Code Mechanism Position is indicated. (Refer to Fig. 1-4.)			1 2 3 4 5 6 7 8 9 A B C D	
Lock Code (See Note) • VCR is not in shut-off condition. • Reel lock. • Cylinder lock. • Exceeds loading/unloading time. (Mechanism Lock) • Exceeds Cassette loading/unloading time. (Cassette Lock) Tape Unloading (direction) Tape Loading (direction)			 1 2	 0 1 2 3 4 4

Fig. 1-3



Mechanism position	EJECT		CASSETTE DOWN		STOP/ STBY		REV		PLAY/CUE/ SLOW/STILL		BRAKE		FF/REW
position code	1	2	3	4	5	6	7	8	9	A	B	C	D

Fig. 1-4

Note:
When 1 to 4 listed in Lock code occurs, the VCR stops and all VCR function buttons except for power become non-operational.

3. Press any operation button except for POWER on either the unit, or the remote to detect that a key has been pressed.
The 1st digit changes to "0" only when key is detected.

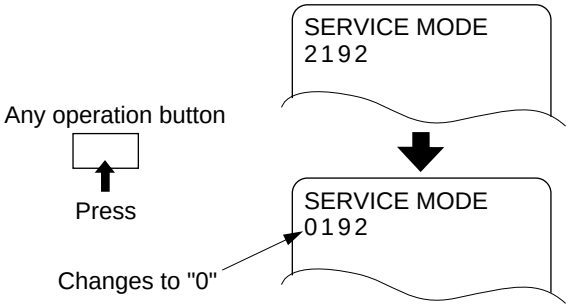


Fig. 1-5

SERVICE POSITION

The Basic Service Position does not require the use of Extension Cables. However, for more extensive servicing, Extension Cables should be used.

1. Basic Service Position

Service Position	Purpose
Service Position (1)	Mechanism check Mechanical adjustment Electrical adjustment
Service Position (2)	Main C.B.A. check TV Main C.B.A. check

CAUTION:

HOT CIRCUIT (Primary circuit) exists on the Main C.B.A., TV Main C.B.A., and TV Power C.B.A.
Use extreme care to prevent accidental shock when servicing.

Note:

When disassembling/assembling, refer to "Disassembly/Assembly Procedures of Cabinet" section.

Service Position (1)

1. Remove Rear Cover, VCR Unit, TV Power C.B.A., A/V Jack C.B.A., Top Shield Plate Ass'y, and Stereo Amp C.B.A.
2. Place VCR Unit, TV Power C.B.A., A/V Jack C.B.A., and Stereo Amp C.B.A. as shown.

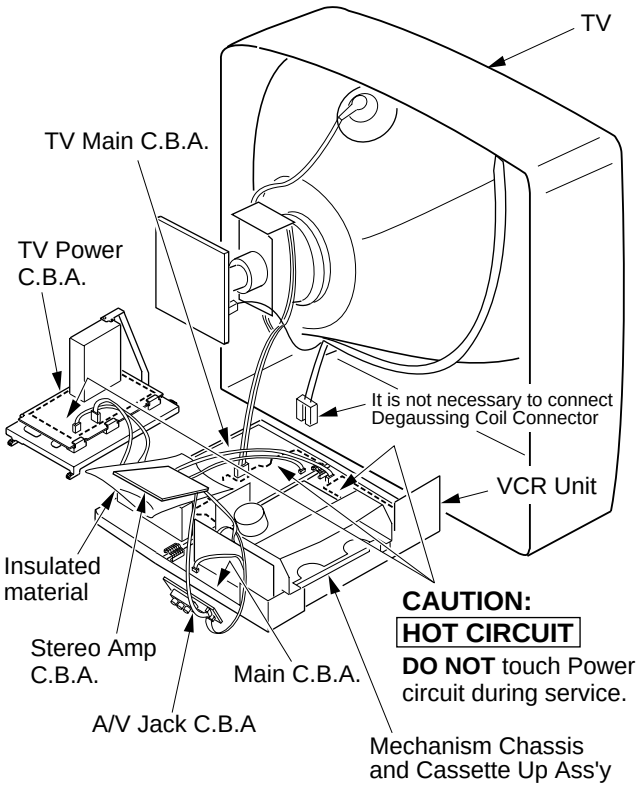


Fig. 2-1

Service Position (2)

1. Remove Rear Cover, VCR Unit, TV Power C.B.A., A/V Jack C.B.A., Top Shield Plate Ass'y, and Stereo Amp C.B.A.
2. Remove Main C.B.A., TV Main C.B.A., Operation I C.B.A., and Operation II C.B.A. from the frame.
3. Place Main C.B.A., TV Main C.B.A., TV Power C.B.A., A/V Jack C.B.A., Stereo Amp C.B.A., Operation I C.B.A., and Operation II C.B.A. as shown.

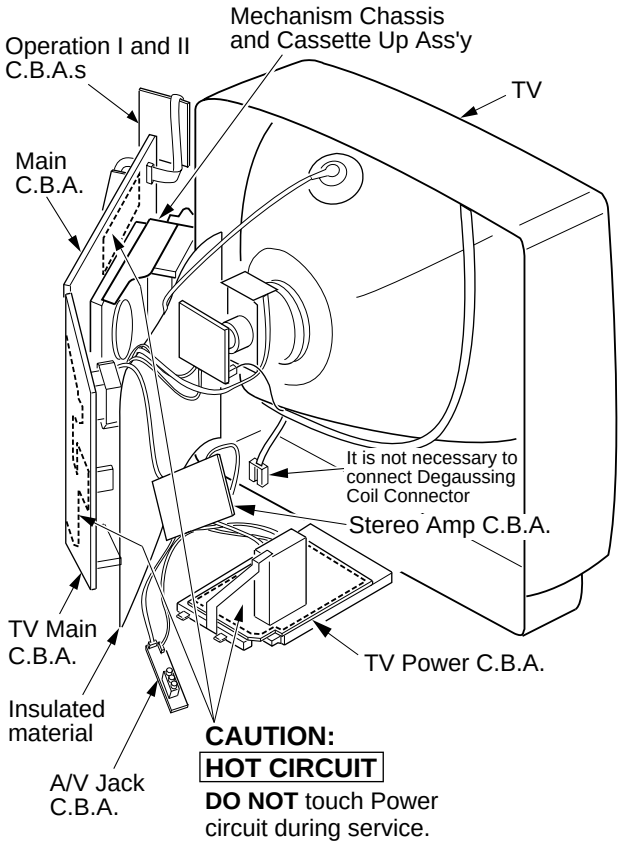


Fig. 2-2

2. Service Position with Extension Cable Kit

In Service Position with Extension Cable Kit, mechanism check from the Bottom Side of Mechanism Chassis and Capstan Stator Unit (Capstan Motor Drive, Loading Motor Drive Circuit) check with power on condition can be performed.

Service Position

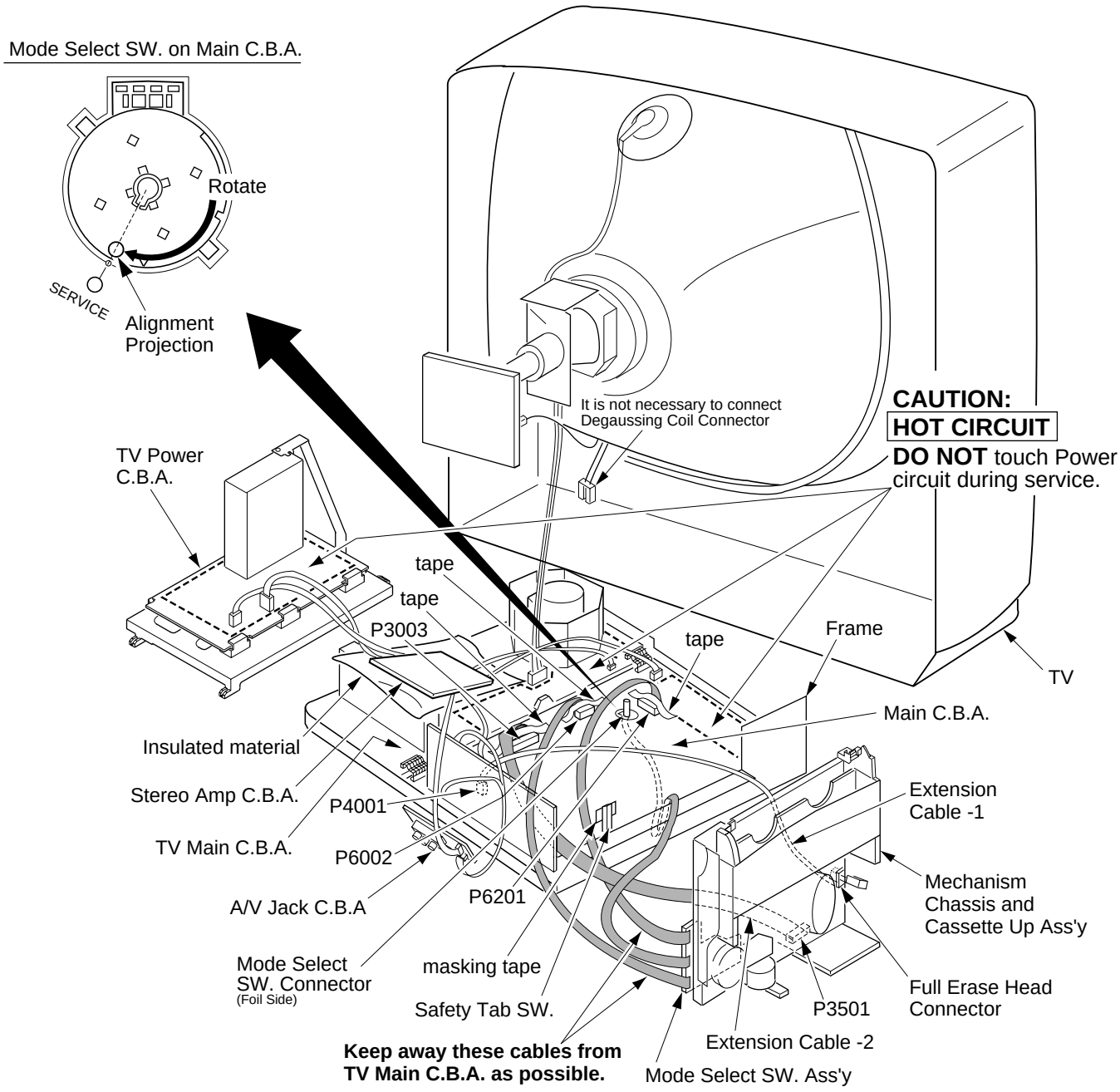


Fig. 2-3

CAUTION:

HOT CIRCUIT (Primary circuit) exists on the Main C.B.A., TV Main C.B.A., and TV Power C.B.A.
Use extreme care to prevent accidental shock when servicing.

Note:
When disassembling/assembling, refer to "Disassembly/Assembly Procedures of Cabinet" section.

Extension Cable Kit (VUZS0002)

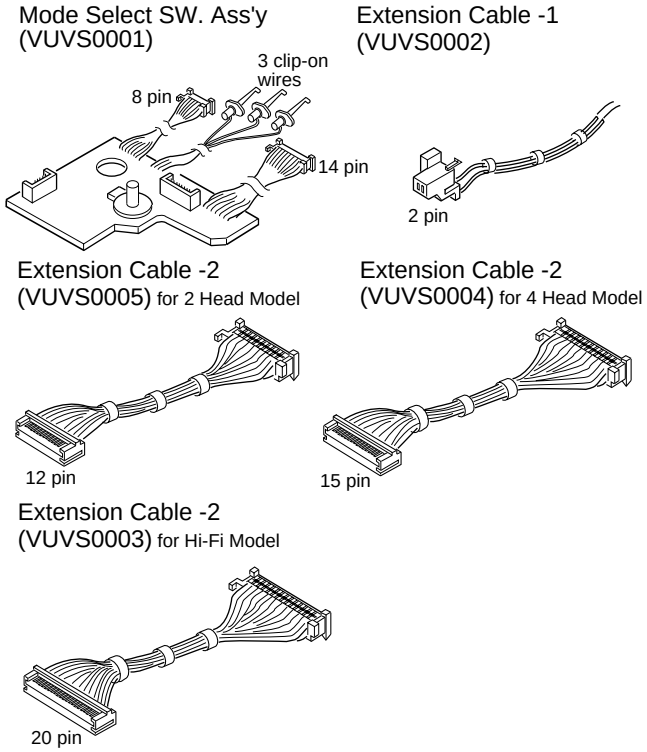


Fig. 2-4

Note:
3 types of Extension Cable -2 are included in this kit. Since there is a difference in the number of P3501 Head Amp C.B.A. pins between 2 Head, 4 Head, and Hi-Fi models, be sure to use the proper cable.

How to place the unit into Service Position with Extension Cables

1. Remove Rear Cover, VCR Unit, TV Power C.B.A., A/V Jack C.B.A., Top Shield Plate Ass'y, Stereo Amp C.B.A., Mechanism Chassis, and Cassette Up Ass'y.
2. Connect the Extension Cables as follows:

Extension Cable -1: Full Erase Head Connector on the Mechanism Chassis Unit ~ P4001 on the Main C.B.A.
Note: No change in performance if pins are reversed.

Extension Cable -2: P3501 on the Head Amp C.B.A. ~ P3003 on the Main C.B.A.

Mode Select SW. Ass'y: a) 3 Clip-on Wires ~ Mode Select SW. Connector on the Main C.B.A.

	1 Pin (Not Used)
Red Wire	~ 2 pin
Orange Wire	~ 3 pin
Yellow Wire	~ 4 pin

b) 8 Pin Connector ~ P6002 on the Main C.B.A.

c) 14 Pin Connector ~ P6201 on the Main C.B.A.

d) Set Mode Select SW. on the Mode Select SW. Ass'y to EJECT position and install onto Mechanism Chassis.

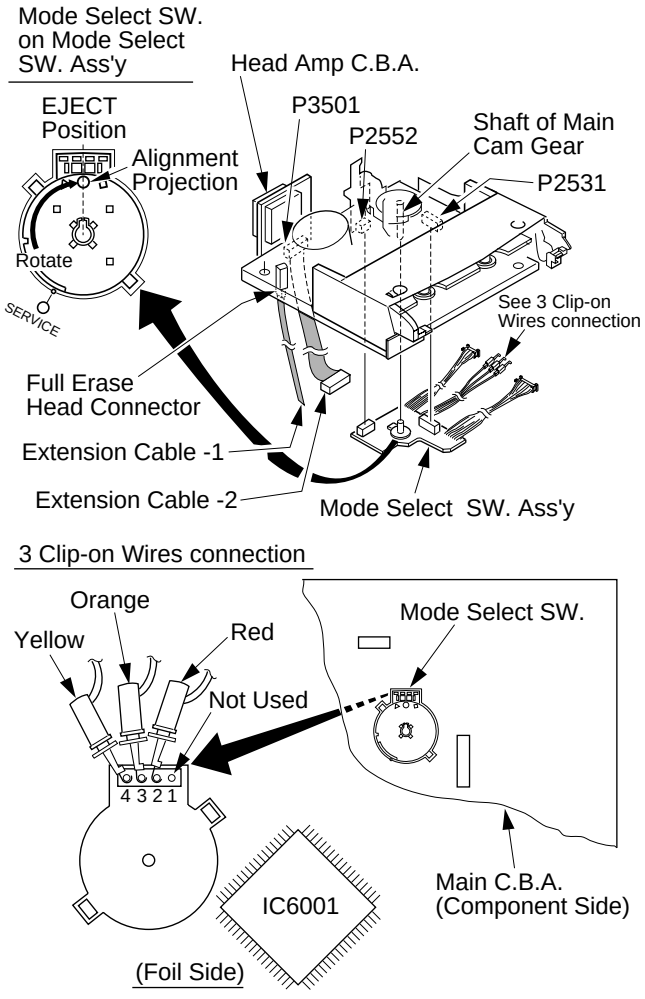


Fig. 2-5

3. Place the VCR Unit, TV Power C.B.A., Stereo Amp C.B.A., and A/V Jack C.B.A. as shown.
4. Secure the Extension Cables with tape as shown. When recording, cover the Safety Tab SW. with masking tape to turn this SW. on.
   Note:
   To avoid damaging the connectors on Main C.B.A., it is necessary to secure connectors with tape as shown.
5. Set Mode Select SW. on the Main C.B.A. to Service Position.
6. Plug the AC plug into an AC outlet.
7. Insert a cassette.
   The power comes on, the tape is fully loaded, and the unit goes into the STOP Mode.
8. Place a jumper between TP6001 and GND to place the unit in Service Mode.
9. Check and/or repair the unit.
10. Press the STOP/EJECT button to eject the cassette.

Note:
When inserting a cassette again, remove the jumper between TP6001 and GND and insert the cassette. Then, reconnect the jumper.

11. After servicing, remove the jumper between TP6001 and GND to release the unit from Service Mode.

CAUTION:

HOT CIRCUIT (Primary circuit) exists on the Main C.B.A., TV Main C.B.A., and TV Power C.B.A.
Use extreme care to prevent accidental shock when servicing.

Note:
When disassembling/assembling, refer to "Disassembly/ Assembly Procedures of Cabinet" section.

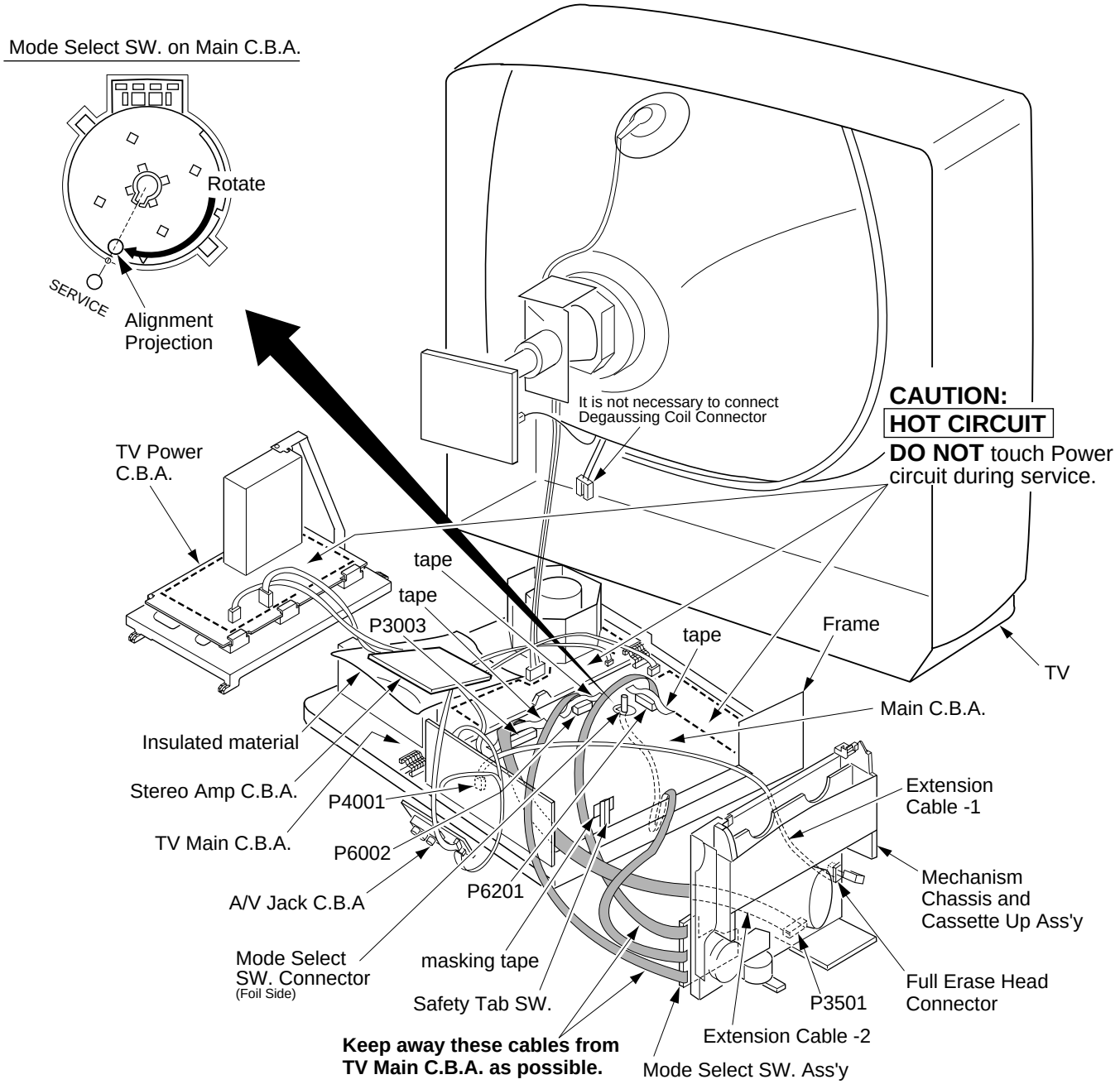


Fig. 2-6

HOT CIRCUIT

Primary circuit exists on the Main C.B.A., TV Main C.B.A., and TV Power C.B.A.
This circuit is identified as "**HOT**" on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

SERVICE MODE

In order to inhibit detection of the Supply & Takeup Photo Transistors, Reel Sensor, and Cylinder Lock, place a jumper between TP6001 and GND.

In this mode, Mechanism movement can be confirmed. When removing Cassette Up Ass'y, it can be confirmed without a cassette.

To release from this mode, remove the jumper between TP6001 and GND.

INSTALLATION OF VCR UNIT CAUTION

1. Swing the Cassette Door -Lid all the way open until the Cassette Door tab clears the Opener Lever.
2. Make sure that all guide tabs are aligned properly. Then, press the VCR Unit straight in.

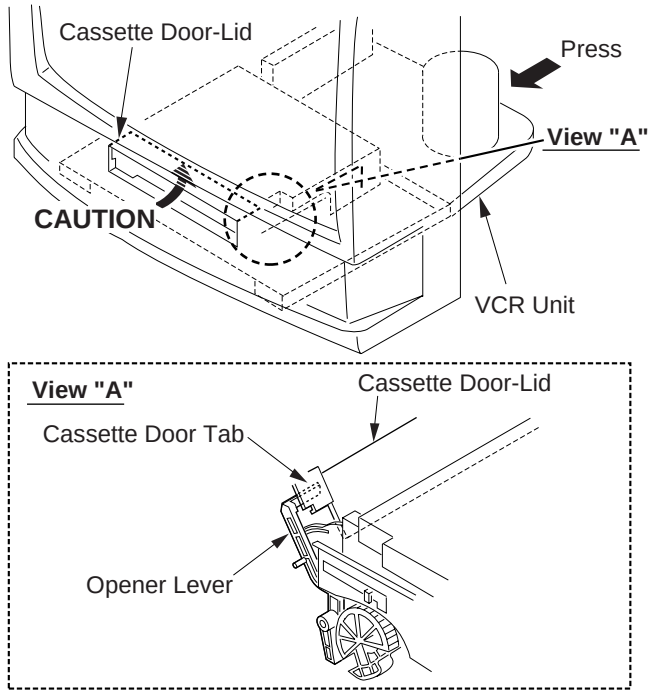


Fig. 3

METHOD FOR LOADING/ UNLOADING OF MECHANISM

(Manual Method)

Turn the Main Cam Gear counterclockwise (for loading) or clockwise (for unloading) using needlenose pliers etc.

Note:
Do not use this method if Mechanism is jammed or locked.

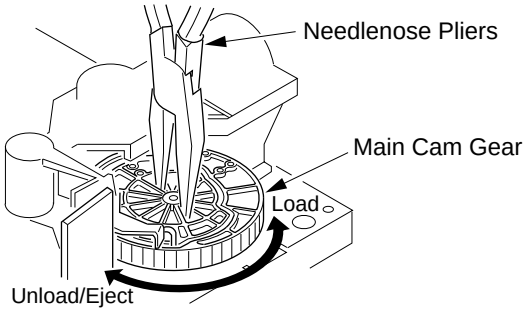


Fig. 4-1

(Electrical Method)

Remove the solder as shown and apply +10.0 VDC Power Supply (DC + to Portion "a," DC - to Portion "c").

Note:
Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).
Be sure to apply DC + to Portion "a" of Motor P.C.B.
If DC + is applied to Portion "b", the Loading Motor Drive IC (IC2501) may be damaged.

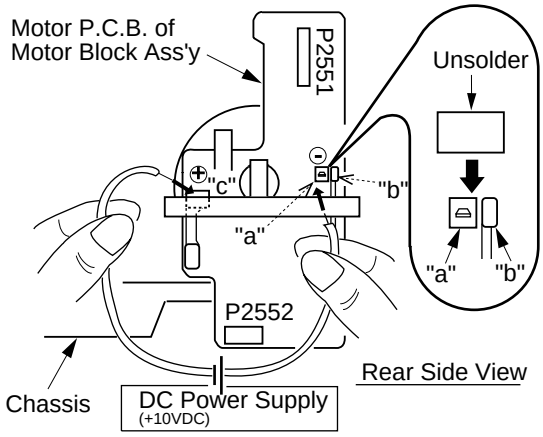


Fig. 4-2

Note:
Do not forget to solder Portions "a" and "b" after loading/ unloading operation is completed.

When loading without a cassette, press Portion "a" on both sides of the Holder Unit of Cassette Up Ass'y so that the Levers clear the Tabs and Holes.

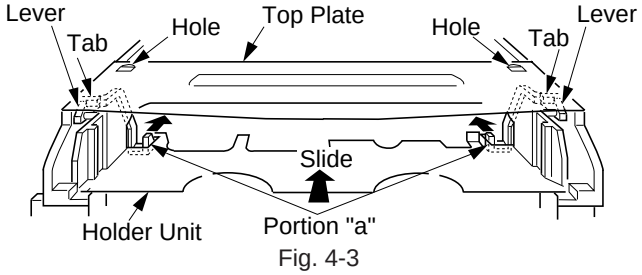


Fig. 4-3

HOW TO REMOVE A JAMMED TAPE

Manual Method

When a tape jam is encountered, check the tape loading condition and use the following procedure to remove a tape jam.

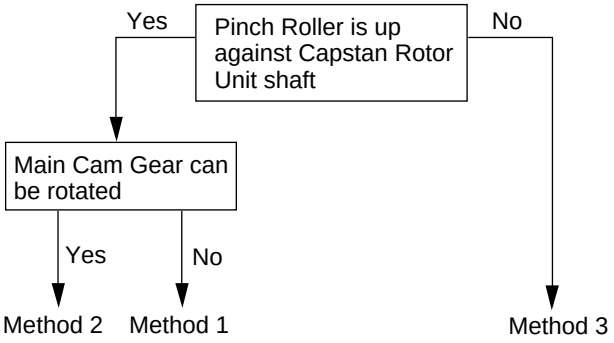


Fig. 5-1

Method -1:

1. While releasing 2 Locking Tabs (A) of Opener Piece, pull the Opener Piece up as far as you can.
2. Move the pin of Pinch Arm Unit out of the groove of the Main Cam Gear so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.

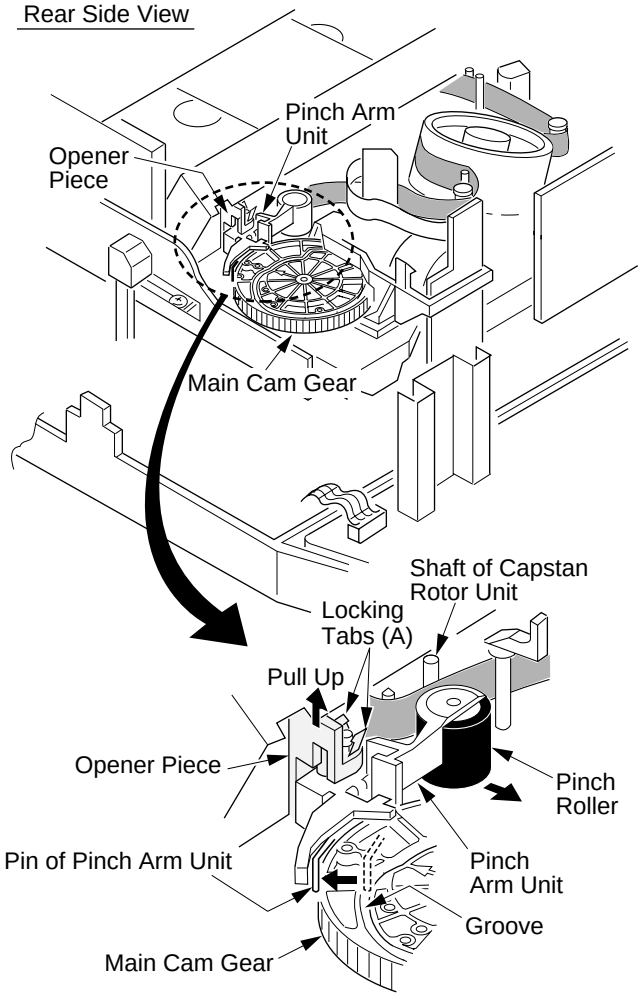


Fig. 5-2

3. Remove the tape from the tape path.
4. Rewind the tape into the cassette by rotating the Center Clutch Unit counterclockwise.
5. Unhook Spring (A) of the Drive Rack Unit.
6. Remove Screw (A).
7. Lift the Drive Rack Unit up so that the slot clears the guide tab. While pulling the Drive Rack Unit out far enough so that it clears the Drive Rack Arm, slide the Drive Rack Unit as indicated by the arrow to remove the cassette tape from the Cassette Up Ass'y.
8. Check the cause of mechanical trouble and repair.

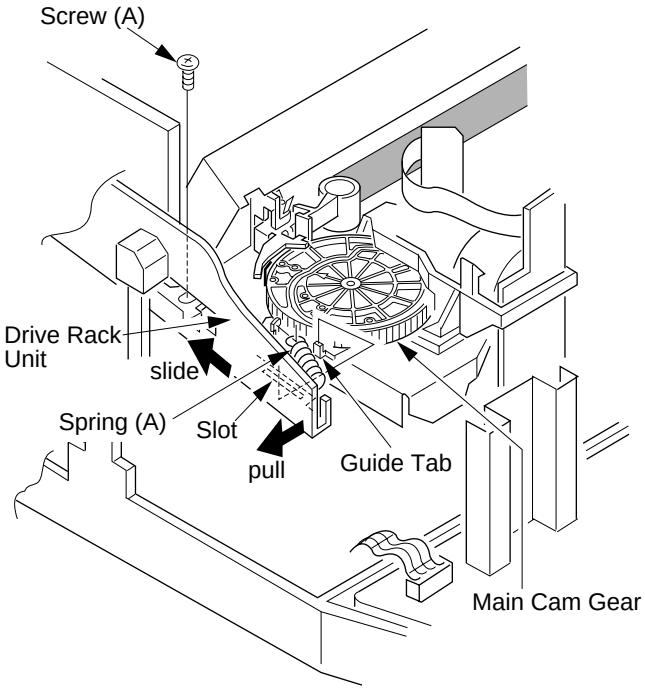


Fig. 5-3

Method -2:

1. Rotate Main Cam Gear clockwise with needlenose pliers, etc. so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.
2. Perform Step 3 through Step 8 of Method -1.

Method -3:

1. Perform Step 3 through Step 8 of Method -1.

Note:

After repairing mechanical trouble, make sure that all gear alignments are correct, especially the Wiper Arm Unit and Drive Rack Unit of Cassette Up Ass'y. (Refer to "**EJECT** Position confirmation" in Disassembly/Assembly Procedures of Mechanism.)

Electrical Method

Electrical method can only be performed when the mechanism is moved by rotating the Main Cam Gear.

CAUTION:

If loading does not start in approx. 2 seconds after DC Power Supply is applied, DO NOT continue to apply DC Power Supply. Instead, perform "Manual Method."

Method -1:

1. Remove the solder as shown and apply +10.0 VDC Power Supply (DC + to Portion "a," DC - to Portion "c").
2. When the Loading Posts reach the fully unloaded position, remove the Power Supply.

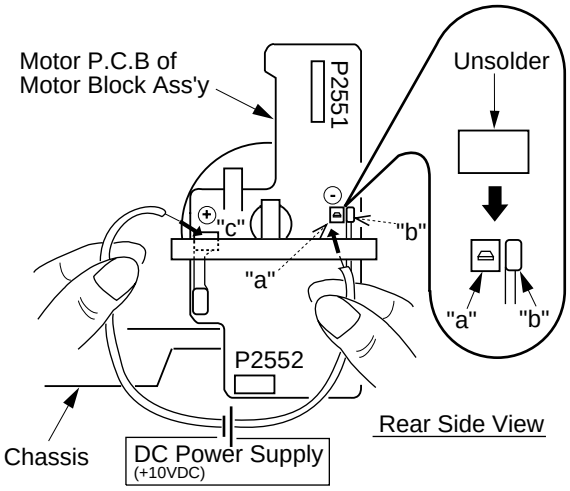


Fig. 6-1

Note:

Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).
Be sure to apply DC + to Portion "a" of Motor P.C.B.
If DC + is applied to Portion "b", the Loading Motor Drive IC (IC2501) may be damaged.

3. Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.
4. Eject the cassette by applying +10.0VDC Power Supply again.
5. After completing the removal procedure, solder Portion "a" and Portion "b."

Method -2:

1. Locate the Jumper (J6004) on the Audio Amp Section of the Main C.B.A. and cut it near the center.

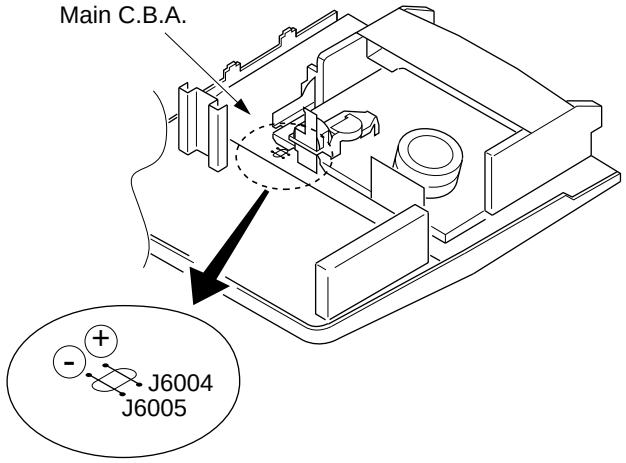


Fig. 6-2

2. Apply +10.0VDC Power Supply to the jumpers. When the Loading Posts reach the fully unloaded position, remove the Power Supply.

Note:

Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).
Be sure to apply DC + to Portion "a" of J6004.
If DC + is applied to Portion "b" of J6004, the Loading Motor Drive IC (IC2501) may be damaged.

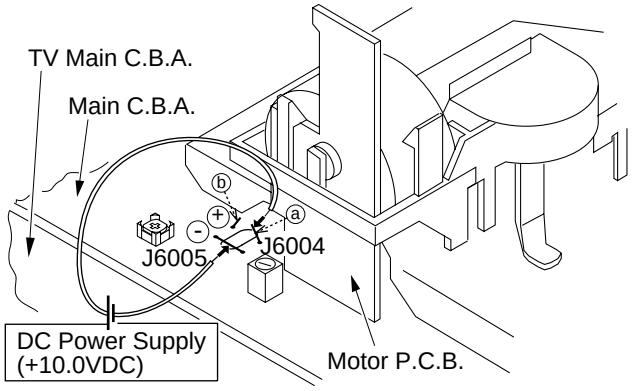


Fig. 6-3

3. Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.
4. Eject the cassette by applying +10.0VDC Power Supply again.
5. After completing the removal procedure, resolder Jumper (J6004).

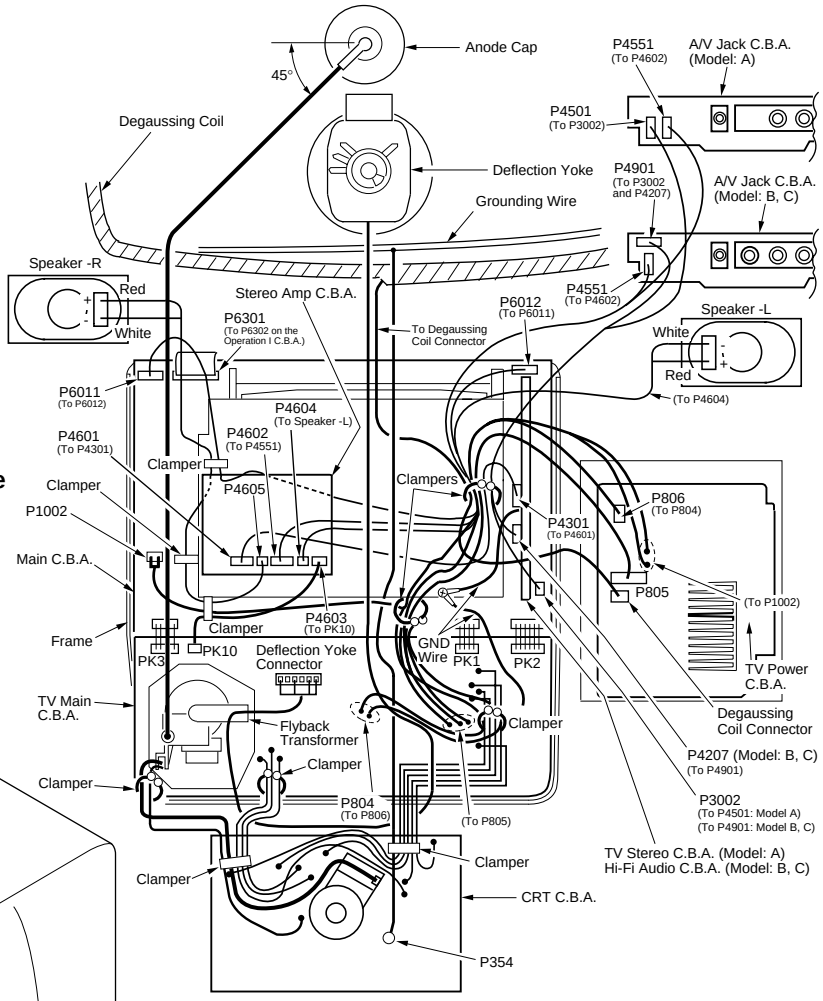
WIRE AND LEAD POSITION DIAGRAM

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

Note:

No lead wires or flat cables should touch any heating parts or the Heat Sink Plate. Use extreme care especially for followings.

- **Anode Lead:**
  DO NOT touch the Picture Tube.
- **Speaker Connector Leads:**
  DO NOT touch Power circuit on Main C.B.A.
- **P1002 Connector Leads:**
  DO NOT touch HOT circuit on TV Main C.B.A.
- **PK10 Connector Leads and Deflection Yoke Connector Leads:**
  DO NOT touch Heat Sink Plate on TV Main C.B.A.
- **A/V Jack C.B.A. Leads, Degaussing Coil Connector Leads, P805 Connector Leads and P806 Connector Leads:**
  DO NOT touch HOT circuit on TV Power C.B.A. or Heat Sink Plate on TV Power C.B.A.



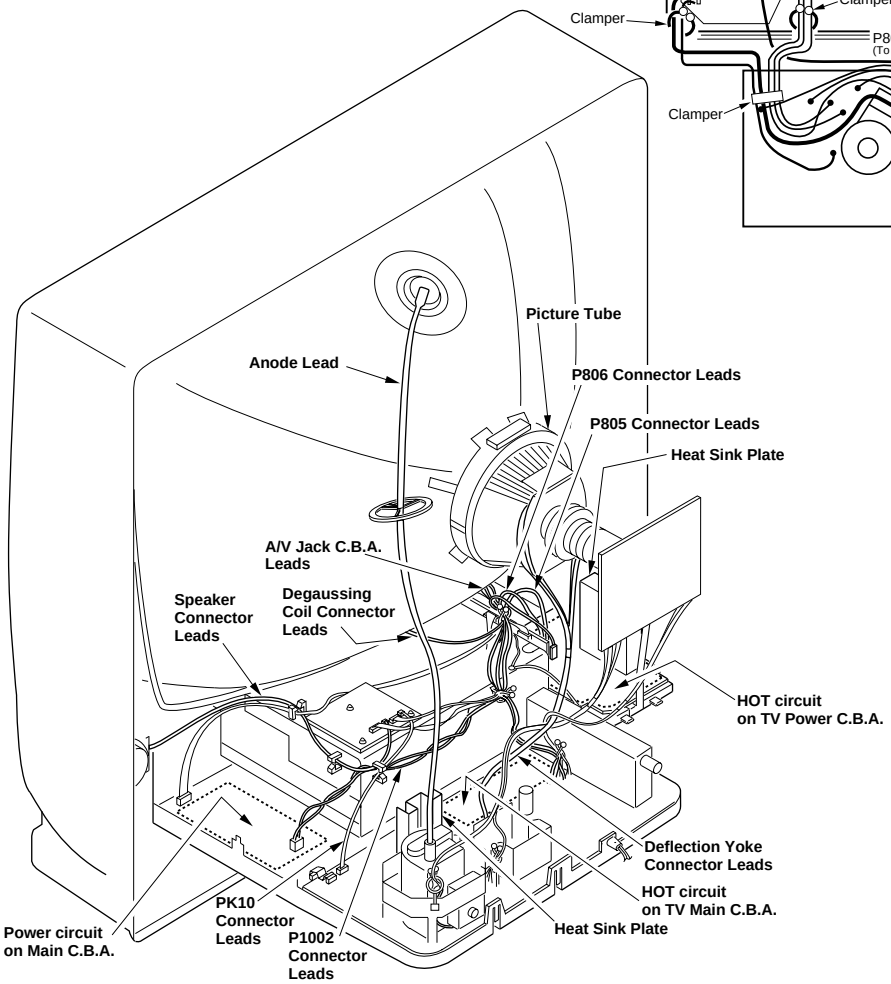


Fig. 7

DEFEATING THE AUTO TRACKING

To defeat the Auto Tracking Function, place the instrument in the STOP mode and place a jumper between TP6003 and TP6009 on the Main C.B.A. The tracking will be placed in the neutral position.

HOW TO SET TRACKING TO THE NEUTRAL POSITION

Ejecting the cassette tape and then reinserting it will reset the tracking to the Neutral position.

CYLINDER ROTATION IN STOP MODE

The cylinder will continue to rotate for approximately 5 minutes after the STOP button is pressed in Play mode etc. Eject the tape in order to stop the cylinder.

BLACK SCREWS ON THE CHASSIS

Black Screws are used on the Mechanism Chassis to identify screws that require adjustment.

HOW TO RESET ALL COMBINATION VCR MEMORY FUNCTIONS

To reset (clear) the select language, channel auto set and set clock functions to their initial power on condition (power on, **no** cassette inserted), hold down the PLAY and REWIND buttons on the unit together for more than 5 seconds.
Power will shut off.

HOW TO CONFIRM AUTO CLOCK SET FEATURE

1. Connect an RF cable from the output of one unit to the input of the test unit.
2. Select corresponding RF channels.
3. Playback a recording of P.B.S. channel including clock set data and confirm this feature.

VARIABLE VOLTAGE ISOLATION TRANSFORMER

An Isolation Transformer should always be used during the servicing of Combination VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect Combination VCR from being damaged by accidental shorting that may occur during servicing.
Also, when troubleshooting the above type of Power Supply Circuit, a variable isolation transformer is required in order to increase the input voltage slowly.

SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

REPLACEMENT PROCEDURE FOR LEADLESS (CHIP) COMPONENTS

The following procedures are recommended for the replacement of the leadless components used in this unit.

1. Preparation for replacement
   a. Soldering Iron
      Use a pencil-type soldering iron that uses less than 30 watts.
   b. Solder
      Eutectic Solder (Tin 63%, Lead 37%) is recommended.
   c. Soldering time
      Do not apply heat for more than 4 seconds.
   d. Preheating
      Leadless capacitor must be preheated before installation. – (266°F ~ 302°F)
      (130°C ~150°C) for about two minutes.

   Note:
   a. Leadless components must not be reused after removal.
   b. Excessive mechanical stress and rubbing of the component electrode must be avoided.

2. Removing the leadless component
   Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes is melted, remove the leadless component with a twisting motion.

   Note:
   a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by a twisting action.
   b. Be careful not to break the copper foil on the printed circuit board.

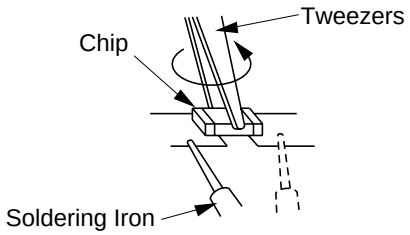


Fig. 8-1

3. Installing the leadless component
   a. Presolder the contact points on the circuit board.

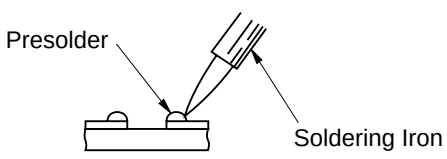


Fig.8-2

b. Press the part downward with tweezers and solder both electrodes as shown below.

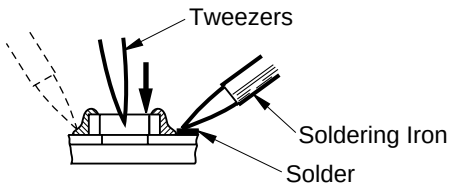


Fig. 8-3

Note:
Do not glue the replacement leadless component to the circuit board.

MODEL NO. IDENTIFICATION MARK

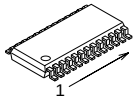
Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

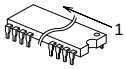
Note:
Refer to Item 5 of Schematic Diagram Notes of Schematic Diagram and Circuit Board Layout Notes, for mark "Z."

IC, TRANSISTOR AND CHIP PART INFORMATION

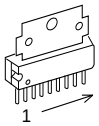
GENERAL C.B.A./ASS'Y PARTS



UPC4570C, LM833M, MN3885S, AN3328S, AN3361SB, AN7395S, AN3371SB, AN3845SC

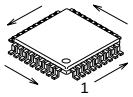


LC8643125F90, TC4053BP, 24LC01B/PS1, CXA1279AS

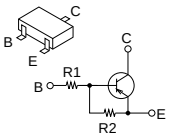


AN5265, AN3809K

2SC945A, 2SA733



AN5367FB, AN3476FBP, MN675058A4N, AN3962FB-V

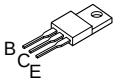


UN211L(R1=4.7K, R2=4.7K), UN2112(R1=22K, R2=22K), DTA144EK(R1=47K, R2=47K)

2SD1458, 2SD636, 2SB641, 2SD2259

MAIN C.B.A.

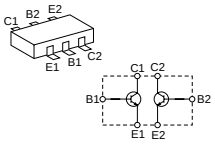
T4101, VLTS0304



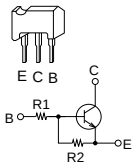
2SC3852, 2SC4533LP.KT, 2SC5130LF608, 2SC4130LF608, 2SC4559LP.KT

ON3131-R.KT, ON3131-S.KT

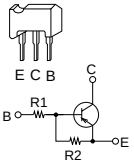
2SD601, 2SD601A, 2SB709



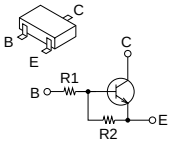
IMX1



UN1215 (R1=10K, R2=OPEN)

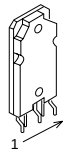


UN1115 (R1=10K, R2=OPEN)



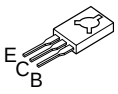
UN2213(R1=47K, R2=47K), UN2212(R1=22K, R2=22K)

TV POWER C.B.A.



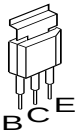
STR30130

CRT C.B.A.

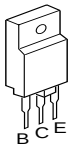


2SC3063

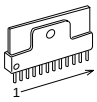
TV MAIN C.B.A.



2SC2653H-CL

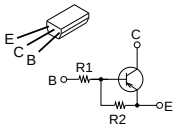


2SD1555LBMTV, 2SD2499LBMA



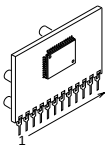
LA7837

TV STEREO C.B.A. or HI-FI AUDIO C.B.A.



DTA144ES (R1=47K, R2=47K)

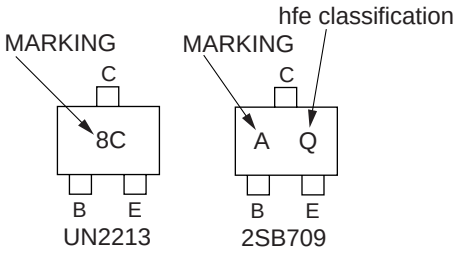
AN7420

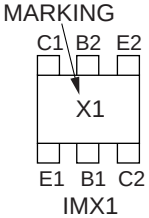


VCRS0214, VCRS0216

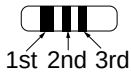
HOW TO READ THE IDENTIFICATION MARK OF CHIP COMPONENTS.

MARKING	PART NO.	MARKING	PART NO.
A	2SB709	6Q	UN211L
Y	2SD601	8B	UN2212
Z	2SD601A	8C	UN2213
X1	IMX1	16	DTA144EK
6B	UN2112		





HOW TO READ THE VALUES OF THE CYLINDRICAL TYPE CHIP COMPONENTS.



The widest color band must be read first for value.

(a) RESISTOR

There are two types (ERD10LLJ... and ERD10TLJ...) of chip parts.

1) ERD10LLJ : Refer to above type.
2) ERD10TLJ : The narrow color band must be read first for value.

If this part is included in the parts list, be sure that the color band is read properly when servicing.

(b) CAPACITOR

Because of the width of the color bands, the reading direction cannot be specified. However, the color band can be read on either side. Be sure to confirm the value using the schematic diagram.

CAUTION :

Once chip parts are removed, they must not be reused. Always use a new part when installing a chip part.

DISASSEMBLY/ASSEMBLY PROCEDURES

DISASSEMBLY/ASSEMBLY PROCEDURES OF CABINET

Disassembly Flowchart

Perform all disassembly procedures in the order described in the "Disassembly Flowchart" shown below. When reassembling, use the reverse procedure.

CAUTION:
Disconnect AC plug before disassembly.

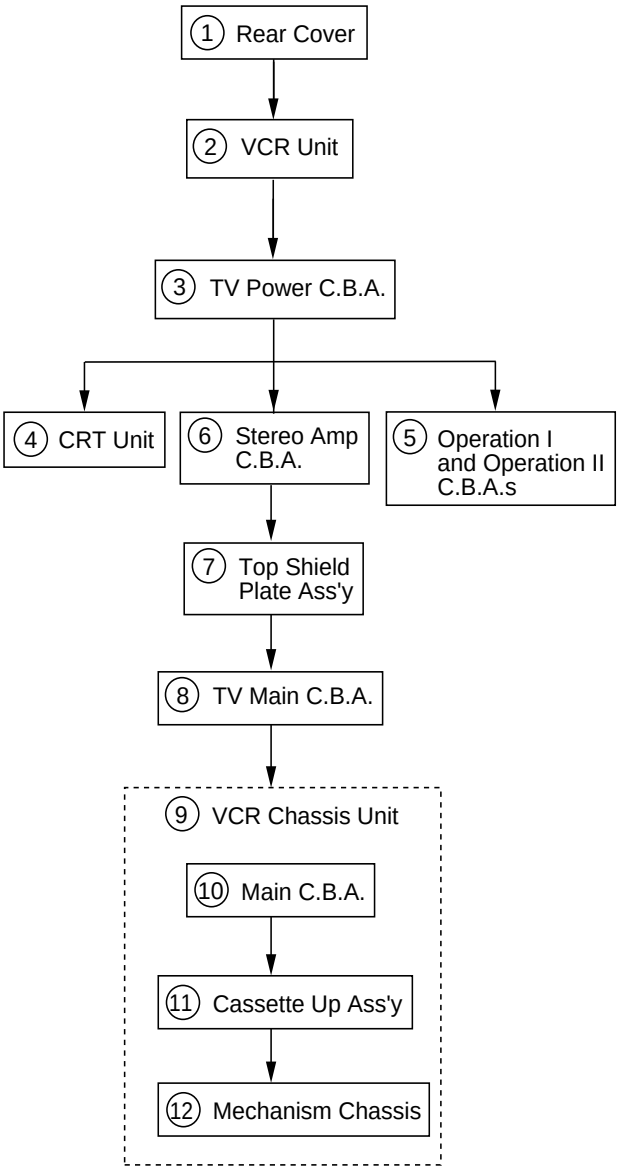


Fig. D1

Rear Cover

Disassembly Procedure

Remove 10 Screws (A). Then, pull the Rear Cover away.

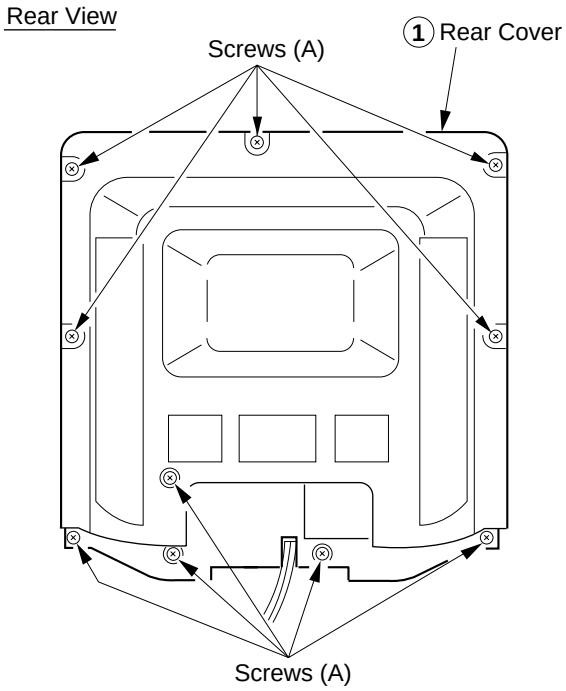


Fig. D2

VCR Unit

Disassembly Procedure

1. Discharge the Anode to the CRT Ground. Then, remove the Anode Cap.
2. Disconnect the Connector P354 from the CRT C.B.A.
3. Carefully pull out the CRT C.B.A. from the CRT Unit.
4. Disconnect the Deflection Yoke Connector from the TV Main C.B.A.
5. Disconnect 4 Connectors P4602, P4604, and P4605 on the Stereo Amp C.B.A. and remove the leads from the clampers.
6. Disconnect 2 Connectors P1002 and P3002 on the Main C.B.A. and remove the leads from the clamper.
7. **(Model: B, C)**
   Disconnect Connector P4207 on the Hi-Fi Audio C.B.A. and remove the leads from the clampers.
8. Disconnect 2 Connectors P805 and P806 on the TV Power C.B.A. and remove the leads from the clampers.

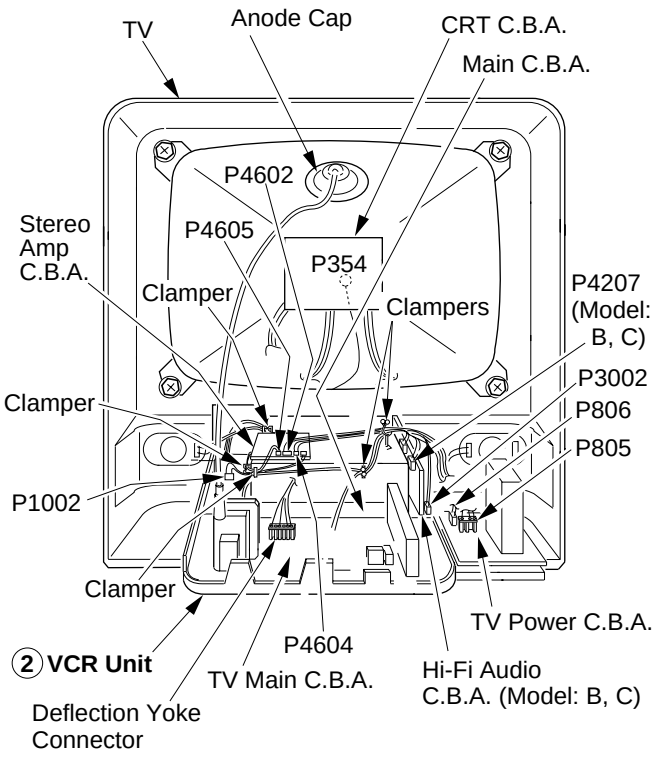


Fig. D3-1

9. Slightly lift up the rear side of the VCR Unit to release 2 Tabs (B).
10. Slide the VCR Unit out as far as it will go.
    Then, lift up the VCR Unit to release 2 Guide Tabs (A) and remove the VCR Unit all the way out from the TV cavity.

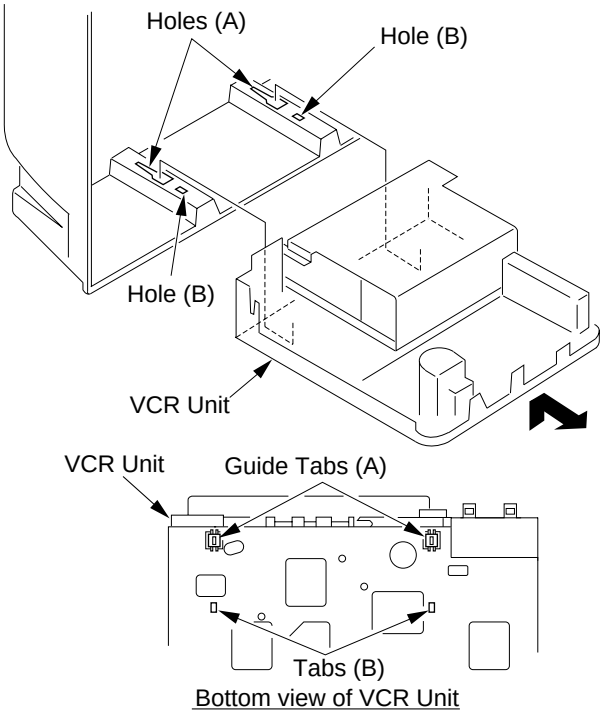


Fig. D3-2

Reassembly Notes

1. Installation of VCR Unit

CAUTION

1) When installing the VCR Unit, swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.
2) Make sure that all guide tabs are aligned properly. Then, press the VCR unit in.

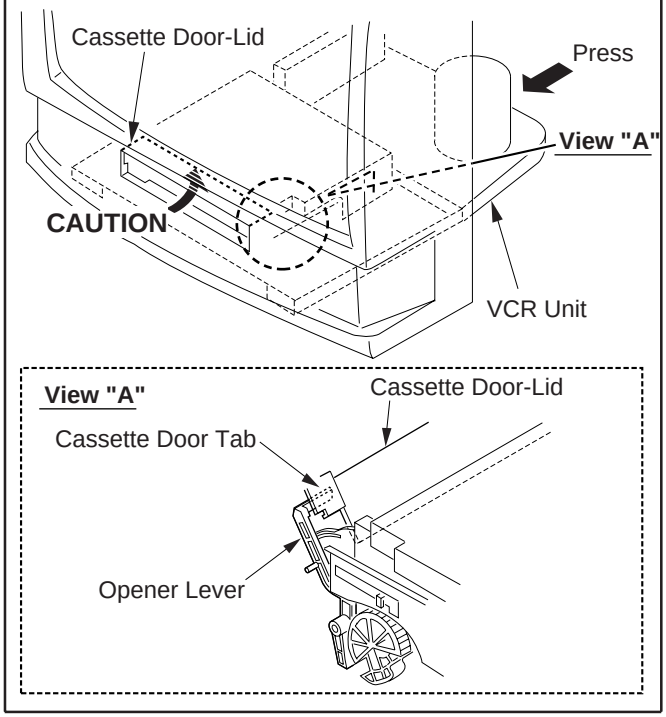


Fig. D3-3

TV Power C.B.A.

Disassembly Procedure

1. Disconnect the Degaussing Coil Connector on the TV Power C.B.A.
2. Slide out the Sub Frame along with the TV Power C.B.A. as far as it will go.
   Then, lift it up on to release 2 Tabs (C) and remove it out from the TV cavity.

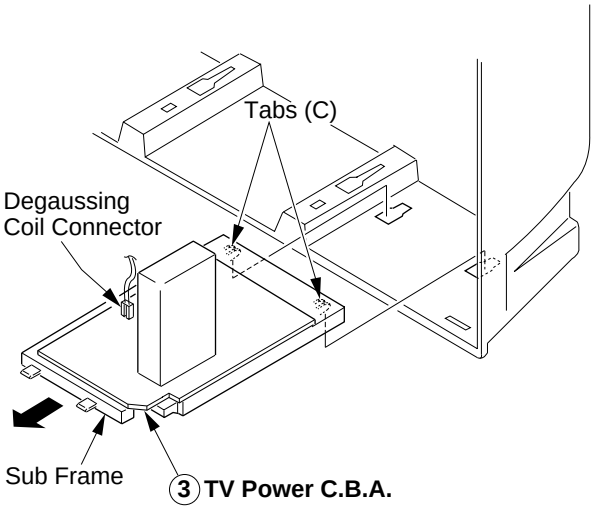


Fig. D4-1

3. Remove Screw (B), Screw (C), and Heat Sink Support Angle.
   Then, remove the TV Power C.B.A. by releasing 2 Locking Tabs (A) from the Sub Frame.

Note:
Work carefully so as not to break the Locking Tabs.

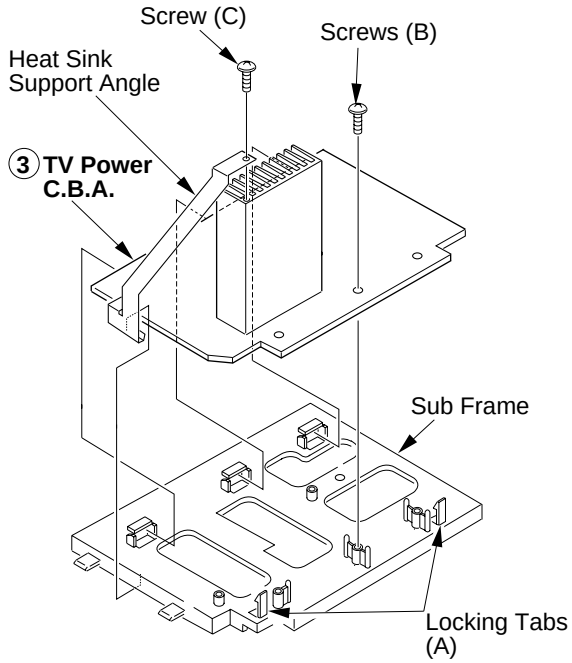


Fig. D4-2

CRT Unit

Disassembly Procedure

Remove 4 Screws with Washers (A). Then, pull out the CRT Unit.

Note:
Place the Unit face down on a soft cloth before removing the CRT Unit.

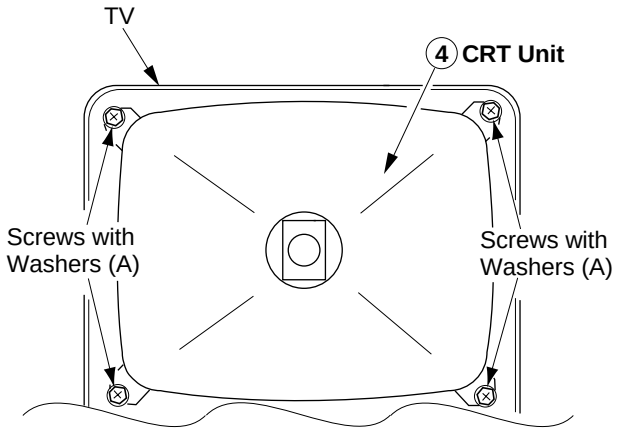


Fig. D5

Operation I and II C.B.A.s

Disassembly Procedure

1. Disconnect Connector P6301 on the Main C.B.A.
2. Remove the Operation I and II C.B.A.s by releasing 4 Locking Tabs (B).

Note:
Work carefully so as not to break the Locking Tabs.

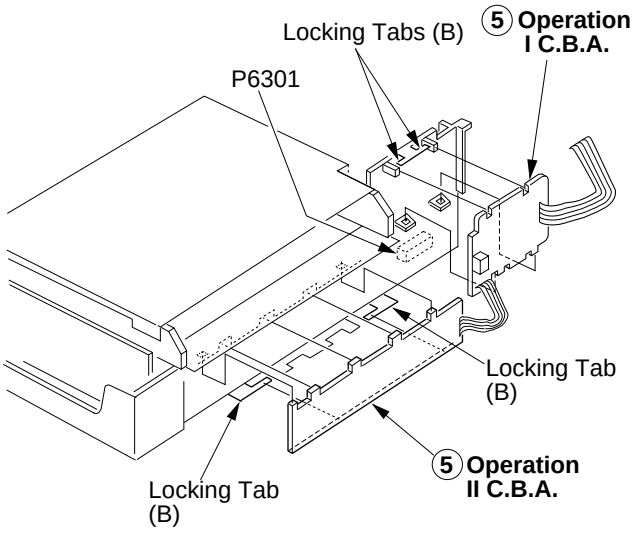


Fig. D6

Stereo Amp C.B.A.

Disassembly Procedure

1. Disconnect Connector P4301 on the TV Stereo C.B.A. **(Model: A)** or Hi-Fi Audio C.B.A. **(Model: B, C)** and remove the leads from the clamper.
2. Disconnect Connector PK10 on the TV Main C.B.A. and remove the leads from the clamper.
3. Release 3 Clampers (A) on the Stereo Amp C.B.A. Then, remove the Stereo Amp C.B.A.

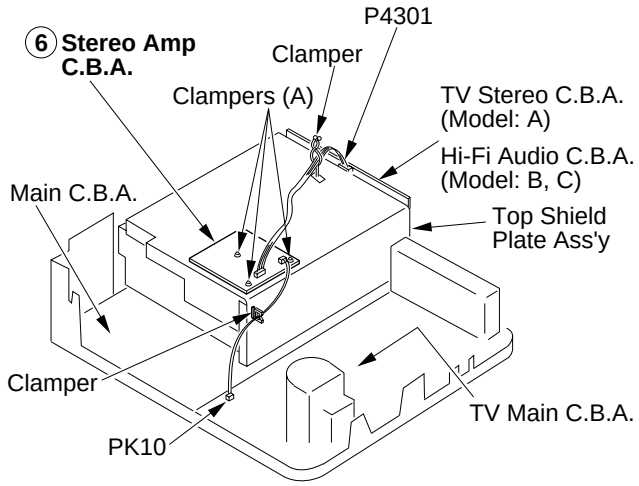


Fig. D7

Top Shield Plate Ass'y

Disassembly Procedure

1. Release 2 Clampers (B) on the Top Shield Plate Ass'y and remove the leads from the clampers.
2. Remove 3 Screws (D).
3. Remove Screw (E) and 2 Ground Wires. Then, remove the Top Shield Plate Ass'y.

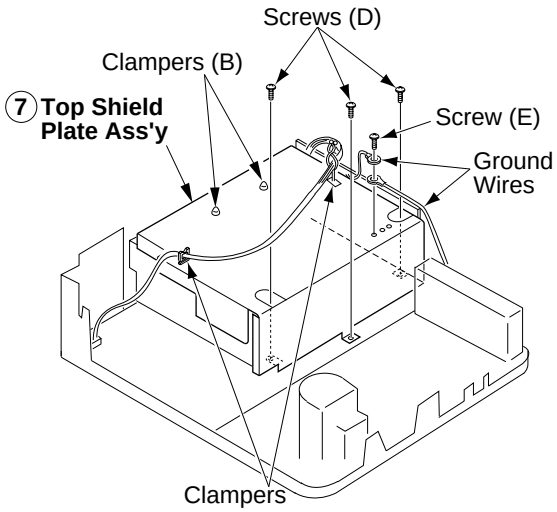


Fig. D8

TV Main C.B.A.

Disassembly Procedure

1. Disconnect 3 Connectors PK1, PK2, and PK3 on the TV Main C.B.A.

   Note :
   When disconnecting or connecting 3 Connectors PK1, PK2, and PK3, take extreme care not to break them.

2. Remove 2 Screws (F) on the TV Main C.B.A.
3. Remove the TV Main C.B.A. by releasing 3 Locking Tabs (C) and A/C Cord from the frame.

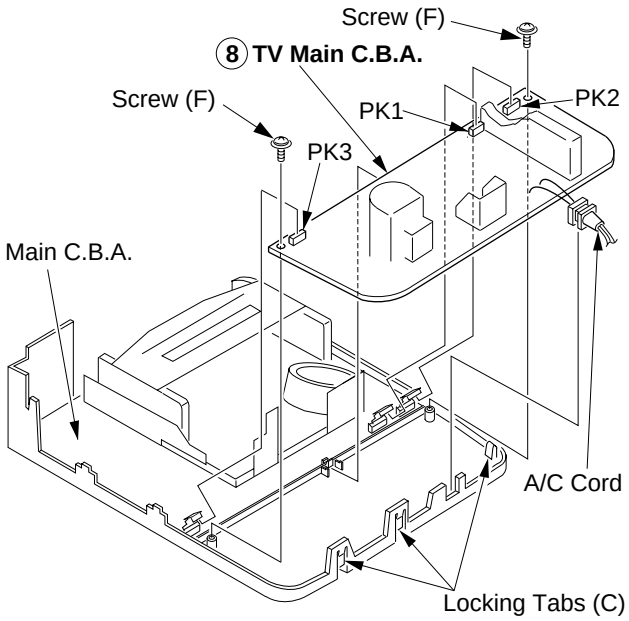


Fig. D9

VCR Chassis Unit

Disassembly Procedure

1. Slide the Holder Unit (refer to "Method for Loading/Unloading of Mechanism" in Service Notes) to gain access to 2 Screws (G) for removal.
2. Remove 3 Screws (H) and (I).
3. Push 2 Locking Tabs (D) and (E) outward while gently lifting the left side of the Cassette Up Ass'y (Portion "A").
4. While pushing Locking Tab (F) outward, lift the right side of the Cassette Up Ass'y (Portion "B") until even with Portion "A". Then, lift the VCR Chassis Unit out of the Frame.

Note:
Work carefully so as not to break Locking tabs.

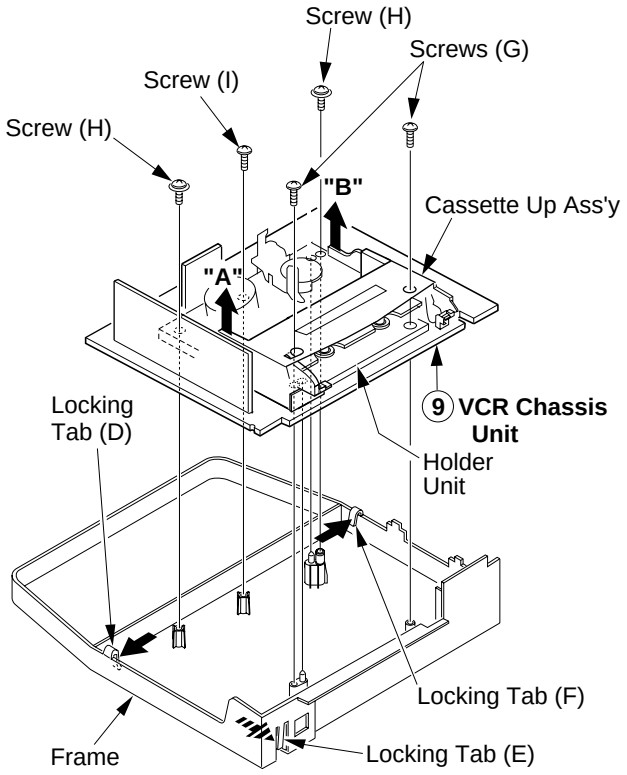


Fig. D10

Reassembly Notes

1. When installing 2 Screws (G), slide the Holder Unit (refer to "Method for Loading/Unloading of Mechanism" in Service Notes) to tighten screws. Then, slide it back to the **EJECT** Position.
   Make sure that Mechanism and Cassette Up Ass'y are in the **EJECT** Position.(Refer to "**EJECT** Position confirmation" in Disassembly/Assembly Procedures of Mechanism.)

Main C.B.A.

Disassembly Procedure

1. Disconnect 4 Connectors of P2531, P2552, P3501 and P4001.
2. Carefully lift the Mechanism Chassis and Cassette Up Ass'y straight out from the Main C.B.A.

Note:
Work carefully so as not to break Sensor LED when lifting the Mechanism Chassis and Cassette Up Ass'y.

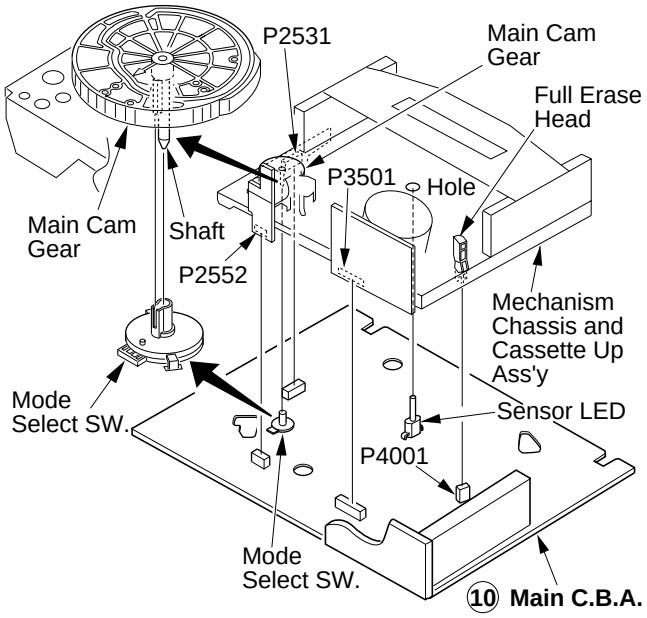


Fig. D11-1

Reassembly Notes

CAUTION

Installation of Mechanism Chassis and Cassette Up Ass'y onto Main C.B.A.

1) Make sure the Mode Select SW. on the Main C.B.A. is in **EJECT** position. If not, rotate the Mode Select SW. until the alignment projection is in the **EJECT** Position as shown below.

   Make sure the Mechanism and Cassette Up Ass'y are in the **EJECT** Position. (Refer to "**EJECT** Position confirmation" in Disassembly/Assembly Procedures of Mechanism.)

Mode Select SW. **EJECT** Position

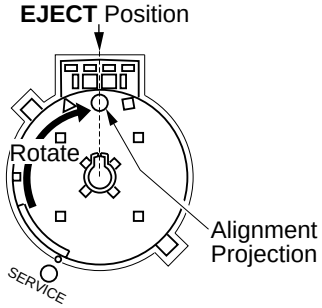


Fig. D11-2

2) Install the Mechanism Chassis and Cassette Up Ass'y straight onto the Main C.B.A. so that the Sensor LED clears the hole in the Mechanism Chassis and that 4 Connectors (P2531, P2552, P3501, and P4001) are aligned and seated securely.

Cassette Up Ass'y

Disassembly Procedure

1. Slide Holder Unit (refer to "Method for Loading/Unloading of Mechanism" in Service Notes) to gain access to 2 Screws (J) for removal.
2. Remove Screw (K).
3. Unhook Spring (A).
4. Slide the Cassette Up Ass'y towards the front to release Locking Tab (G). Then, lift it up and remove.

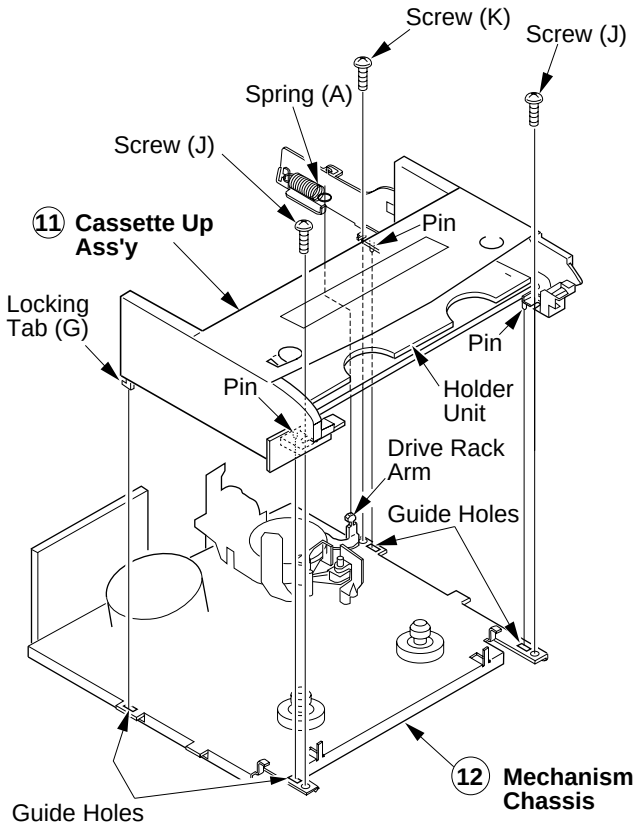


Fig. D12

Reassembly Notes

Installation of Cassette Up Ass'y

1) Confirm that the 3 pins and Locking Tab (G) under the Cassette Up Ass'y are in each of the 4 Guide Holes on the Mechanism Chassis when installing the Cassette Up Ass'y. Then, slide the Cassette Up Ass'y towards the back.
2) Slide Holder Unit (refer to "Method for Loading/Unloading of Mechanism" in Service Notes) to tighten 2 Screws (J) and Screw (K).
   Be careful not to tighten screws too much, or the Cassette Up Ass'y may be bent outward.
   Then, slide it back to the **EJECT** Position.
3) Hook Spring (A) to the Drive Rack Arm on the Mechanism Chassis.

DISASSEMBLY/ASSEMBLY PROCEDURES OF MECHANISM

Disassembly Method

This chart indicates Step/Location No. of Parts to be serviced and prior steps to gain access items to be serviced when disassembling. When reassembling, perform the step(s) in the reverse order.

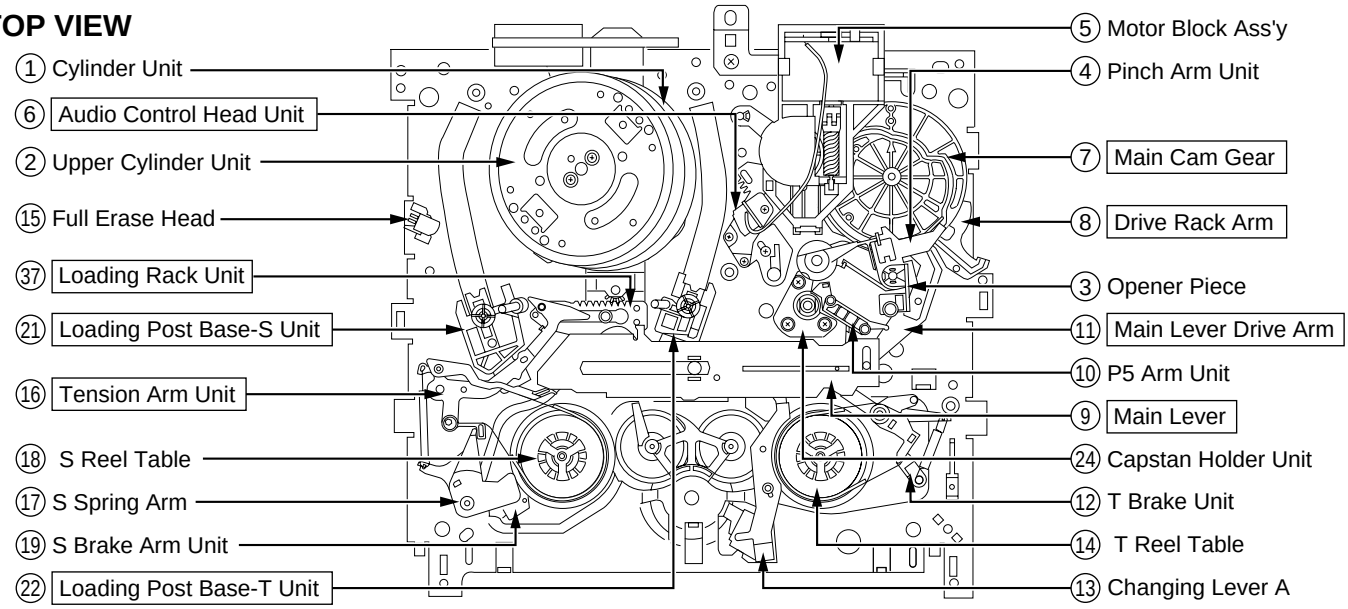
Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)
①	Cylinder Unit	----------	⑪	Main Lever Drive Arm	3, 4, 5, 7, 8, 9	㉑	Loading Post Base-S Unit	16	㉛	S Loading Arm Unit	30
②	Upper Cylinder Unit	----------	⑫	T Brake Unit	9	㉒	Loading Post Base-T Unit	9, 20	㉜	Center Clutch Unit	----------
③	Opener Piece	----------	⑬	Changing Lever A	9	㉓	Capstan Rotor Unit	----------	㉝	Changing Gear Spring	32
④	Pinch Arm Unit	3	⑭	T Reel Table	9, 12, 13	㉔	Capstan Holder Unit	23	㉞	Changing Gear	32, 33
⑤	Motor Block Ass'y	----------	⑮	Full Erase Head	----------	㉕	SS Brake Arm Unit	----------	㉟	Changing Lever-B	32, 33, 34
⑥	Audio Control Head Unit	5	⑯	Tension Arm Unit	----------	㉖	Junction C.B.A.	----------	㊱	Idler Arm Unit	32, 33, 34
⑦	Main Cam Gear	3, 4, 5	⑰	S Spring Arm	----------	㉗	Capstan Stator Unit	23, 25, 26	㊲	Loading Rack Unit	9, 30
⑧	Drive Rack Arm	3, 4, 5, 7	⑱	S Reel Table	16, 17	㉘	Sub Rotor	23, 25, 26, 27	㊳	Grounding Plate Unit	----------
⑨	Main Lever	----------	⑲	S Brake Arm Unit	9, 16, 17, 18	㉙	PCB Holder	23, 25, 26, 27	㊴	FG Head	----------
⑩	P5 Arm Unit	9	⑳	Main Lever Guide	9	㉚	T Loading Arm Unit	----------			

Step/Loc. No.: Order of steps in procedure. Part : Part to be removed or installed. Prior Step(s) : Steps to be completed prior to the current step.

Note: When the mechanical parts surrounded by rectangle are removed or replaced, be sure to perform necessary adjustment or alignment procedures according to the mechanical adjustment procedures section and disassembly/assembly procedures of mechanism section.

Perform all disassembly and alignments procedures in EJECT Position.

TOP VIEW


① Cylinder Unit
⑥ Audio Control Head Unit
② Upper Cylinder Unit
⑮ Full Erase Head
㊲ Loading Rack Unit
㉑ Loading Post Base-S Unit
⑯ Tension Arm Unit
⑱ S Reel Table
⑰ S Spring Arm
⑲ S Brake Arm Unit
㉒ Loading Post Base-T Unit
⑤ Motor Block Ass'y
④ Pinch Arm Unit
⑦ Main Cam Gear
⑧ Drive Rack Arm
③ Opener Piece
⑪ Main Lever Drive Arm
⑩ P5 Arm Unit
⑨ Main Lever
㉔ Capstan Holder Unit
⑫ T Brake Unit
⑭ T Reel Table
⑬ Changing Lever A

BOTTOM VIEW

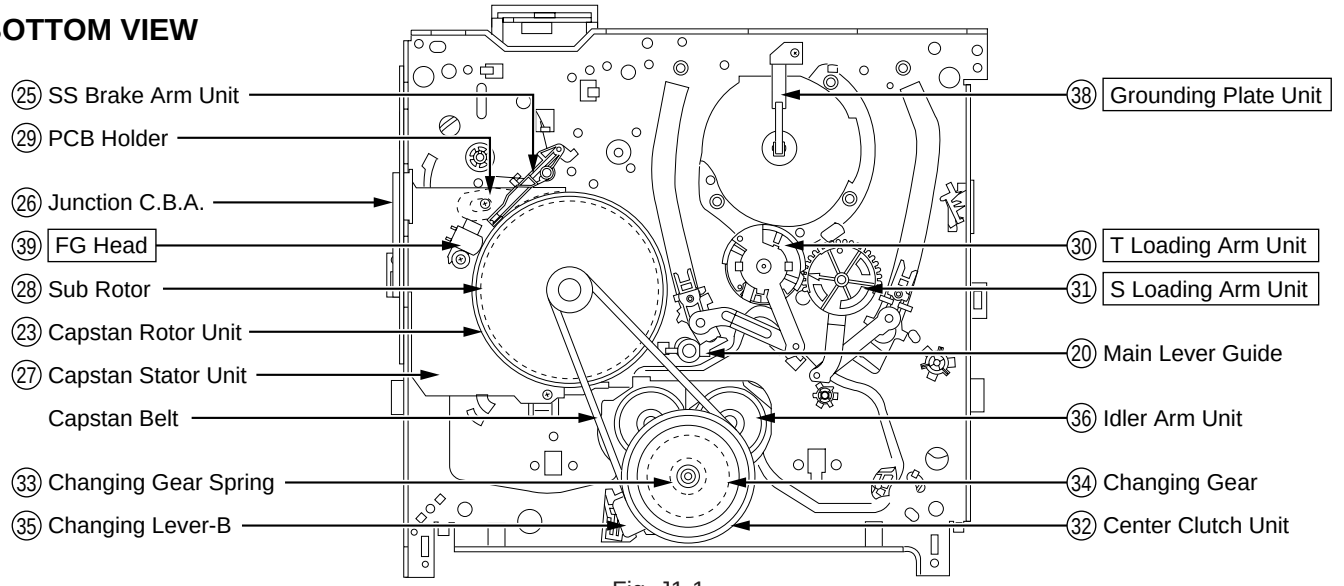


Fig. J1-1

EJECT Position Confirmation

Check the following alignment points to confirm that the Mechanism and Cassette Up Ass'y are in the **EJECT** Position from the top side.

By using alignment points ❖1 & ❖2, it is possible to roughly confirm the S & T Loading Arm Units from the top side, even though they are located on the bottom side of the mechanism chassis.

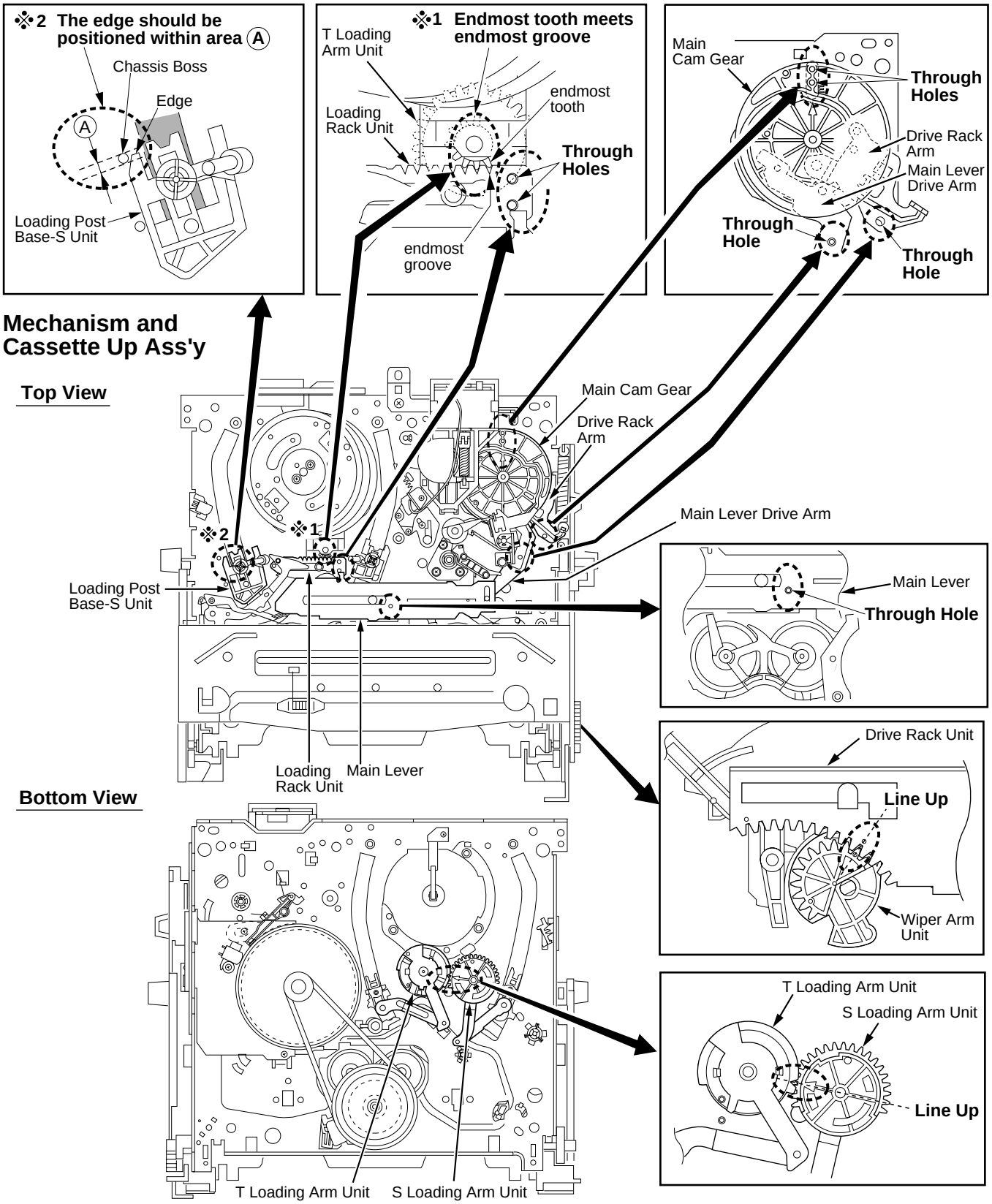


Fig. J1-2

Cylinder Unit

Disassembly Procedure

1. Remove 3 Screws (A) and 2 Screws with Washers (A). Then, lift the Cylinder Unit and the Head Amp C.B.A. out from the mechanism.
2. Unsolder P3502 and P3503. Then, remove the Head Amp C.B.A.

Note:

Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.

CAUTION:

When removing the Cylinder Unit, avoid touching IC2601 on the Head Amp C.B.A. because it is **HOT** during operation.

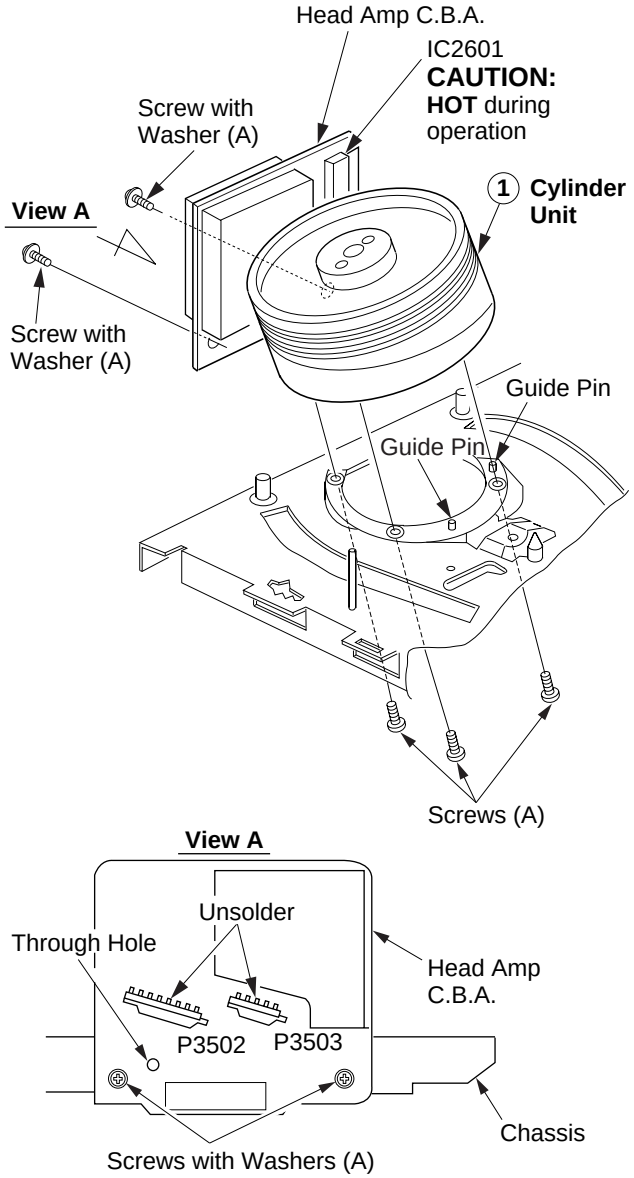


Fig. J2-1

Reassembly Notes

1. Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.
2. **Installation of Cylinder Unit**
   1) Install the Cylinder Unit so that the 2 holes on the lower surface of the Cylinder Unit fit over the 2 Guide Pins on the Cylinder Base and loosely secure it with 3 Screws (A).
   2) Install the Head Amp C.B.A. so that the hole on the Head Amp C.B.A. lines up with the hole on the chassis and secure it with 2 Screws with Washers (A).
   3) Position the Cylinder Unit so that foil patterns of connectors (P3502 and P3503) and Head Amp C.B.A. are aligned, and tighten 3 Screws (A).
   4) Solder connectors (P3502 and P3503).
3. **Adjustment of Grounding Plate Unit**
   1) After installing, make sure that the Grounding Plate Unit, on the bottom side of mechanism chassis, is positioned on the right side of the Cylinder shaft so that the center line of the plate is just less than 1.0 mm measured from the center of the Cylinder shaft.
      If required, adjust the plate position by loosening Black Screw (A).
      Never install the Grounding Plate Unit on the left side of the Cylinder shaft.
      Incorrect positioning will cause cylinder buzz.

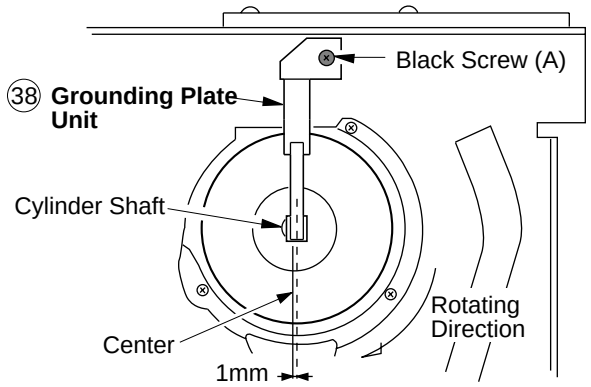


Fig. J2-2

   2) After installing, perform the "Tape Interchangeability Adjustment" procedures.

Upper Cylinder Unit

Disassembly Procedure

1. Remove 2 Screws with Washers (B).
2. Carefully lift the Upper Cylinder Unit from the shaft.

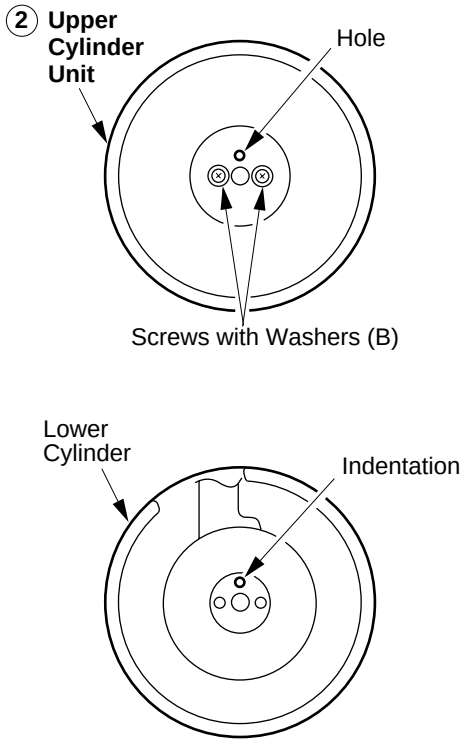


Fig. J3

Note:

Use extreme care when removing or replacing the Upper Cylinder Unit. Do not touch the Video Heads during servicing.

Reassembly Notes

1. Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.
2. **Alignment of Upper Cylinder Unit**
   1) When installing, make sure that the hole on the Upper Cylinder is aligned with the indentation on the Lower Cylinder.
   2) After installing, perform the "Tape Interchangeability Adjustment" procedures.

Opener Piece, Pinch Arm Unit, Motor Block Ass'y, and Audio Control Head Unit

Disassembly Procedure

1. Remove the Opener Piece by pulling it upward while releasing 2 Locking Tabs (A).
2. Pull up on the Pinch Arm Unit.
3. Release 3 Locking Tabs (B) and remove Screw with Washer (C). Then, remove the Motor Block Ass'y and Audio Control Head Unit.

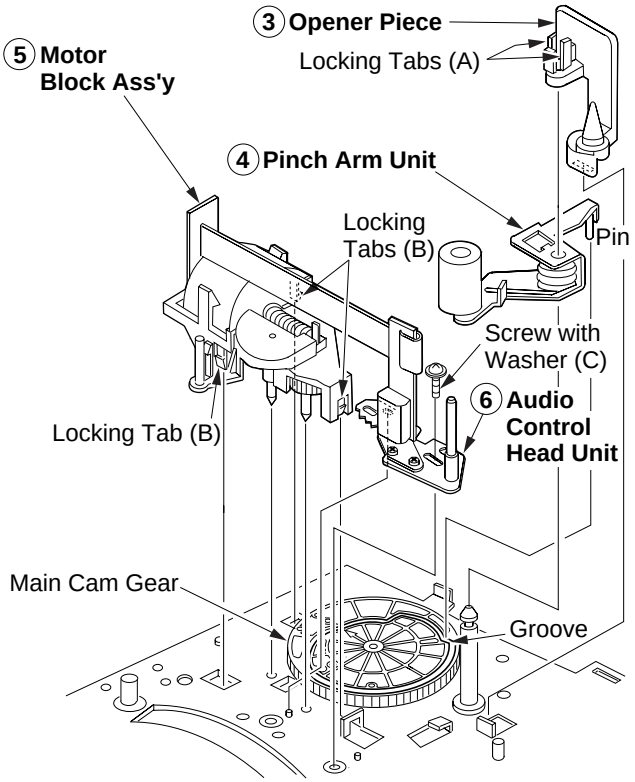


Fig. J4

Reassembly Notes

1. **Installation of Audio Control Head Unit**
   1) Install the Audio Control Head Unit before Motor Block Ass'y.
   2) After installing, perform the "Tape Interchangeability Adjustment" procedures.
2. **Installation of Pinch Arm Unit**
   1) Install the Pinch Arm Unit so that the Pin of Pinch Arm Unit fits in the groove of Main Cam Gear.

Main Cam Gear and Drive Rack Arm

Disassembly Procedure

1. Remove the Main Cam Push Nut. (Refer to Note.)
2. Pull up on the Main Cam Gear.
3. Turn the Drive Rack Arm fully counterclockwise as shown.
4. Pull up on the Drive Rack Arm.

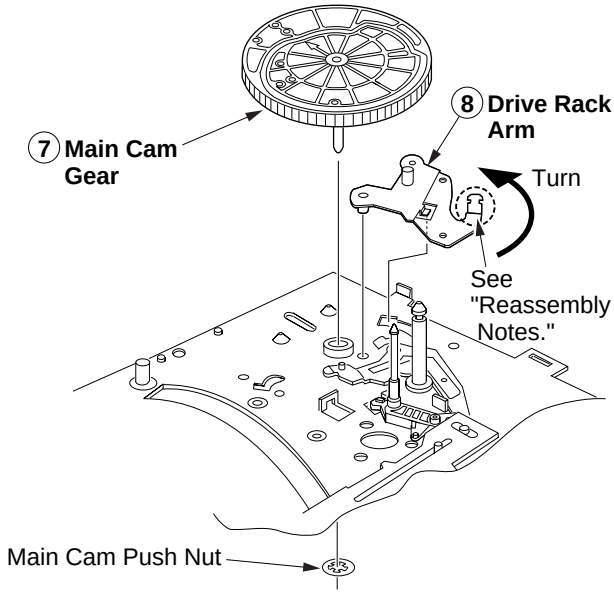


Fig. J5-1

Note:

When removing the Main Cam Push Nut, press the Main Cam Gear to make space between the Main Cam Push Nut and Bottom of Chassis. Then, remove the Main Cam Push Nut using a screwdriver etc.

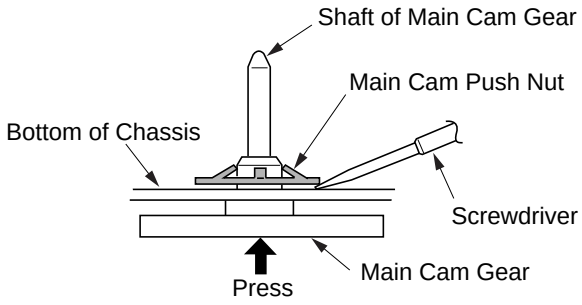


Fig. J5-2

Reassembly Notes

1. **Alignment of Main Cam Gear, Drive Rack Arm, and Main Lever Drive Arm**
   1) Confirm that the hole (C) on the Main Lever Drive Arm is aligned with the hole on chassis (Through hole (C)) as shown.
   2) Install the Drive Rack Arm so that the hole (A) is aligned with the hole on chassis (Through hole (A)) as shown.
   3) Install the Main Cam Gear so that the 2 holes (B) marked "E" are aligned with the hole on chassis (Through hole (B)) as shown. ("E" indicates the EJECT position.)

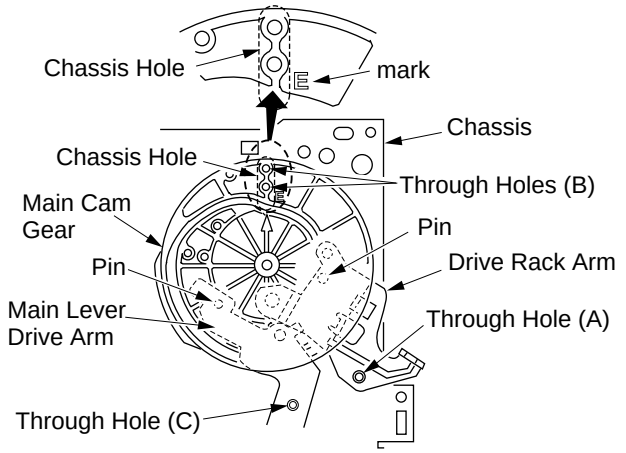


Fig. J5-3

2 . **Holes on Main Cam Gear**
   1) The holes on Main Cam Gear should be aligned with the hole on chassis in each mode (Through hole) as shown.

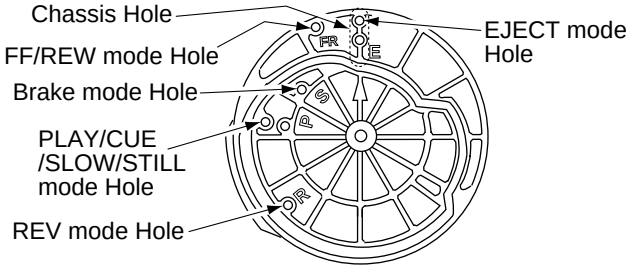


Fig. J5-4

3. **Installation of Main Cam Gear and Main Cam Push Nut**
   1) Position the chassis upside down and place a Support under the Main Cam Gear.
   Install the Main Cam Push Nut with Needlenose Pliers etc. so that it is flush with the chassis.

   There may be some slight scratches on the Shaft of Main Cam Gear, when removing the Main Cam Gear. In case that the Main Cam Gear can be installed securely without tottering, it is fine to use the one. If any tottering, replace a new one.

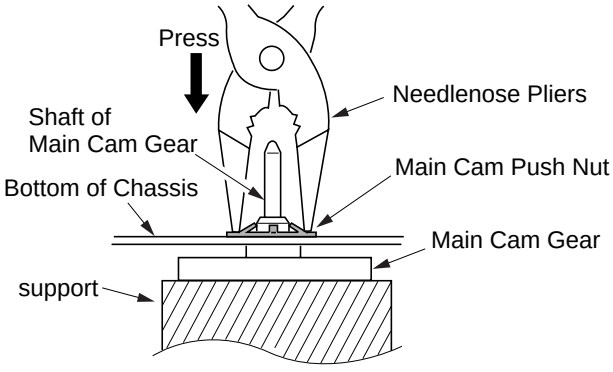


Fig. J5-5

4. The Main Cam Push Nut is not reusable. Install a new one.
5. Make sure to hook Spring (A) of the Cassette Up Ass'y to the Drive Rack Arm. Refer to "Cassette Up Ass'y" in "Disassembly/Assembly Procedures of Cabinet."

Main Lever

Disassembly Procedure

1. Release 2 Locking Tabs (C) and Locking Tab (D). Then, remove the Main Lever.

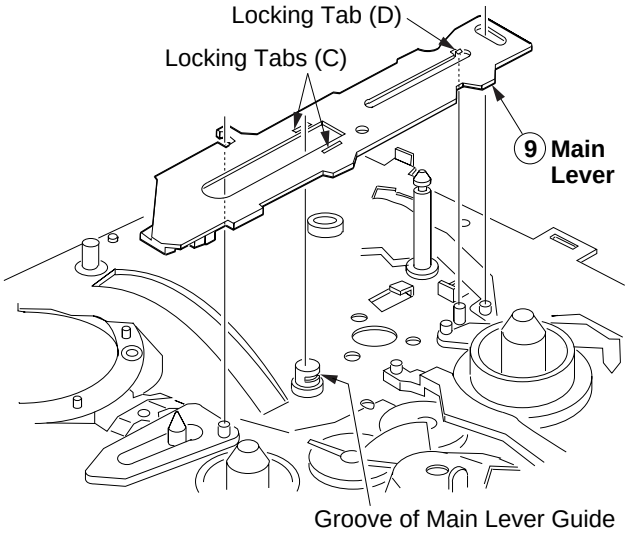


Fig. J6-1

Reassembly Notes

1. **Installation/Alignment of Main Lever**
   1) Make sure that the 2 holes of Loading Rack Unit are aligned with the holes on chassis (Through holes).
   2) Turn the P5 Arm Unit to the Capstan Rotor Unit Shaft side.
   3) Turn the T Brake Unit to the T Reel Table side.
   4) Position the Main Lever so that the Loading Rack Unit Pin fits in the niche of Main Lever.
      Confirm that pins and bosses are in the position and that the hole of Main Lever is aligned with the hole on chassis (Through hole) as shown. Then, install the Main Lever.
   5) Push down the Locking Tabs (C) to set in the groove of Main Lever Guide.

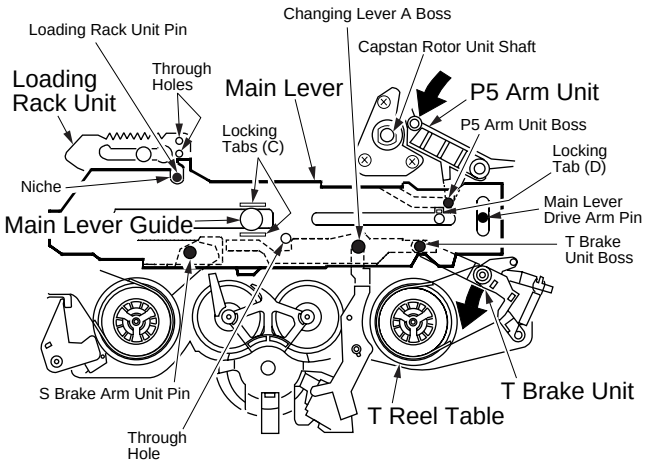


Fig. J6-2

P5 Arm Unit and Main Lever Drive Arm

Disassembly Procedure

1. Pull up on the P5 Arm Unit.
2. Turn the Main Lever Drive Arm fully counterclockwise as shown.
3. Pull up on the Main Lever Drive Arm.

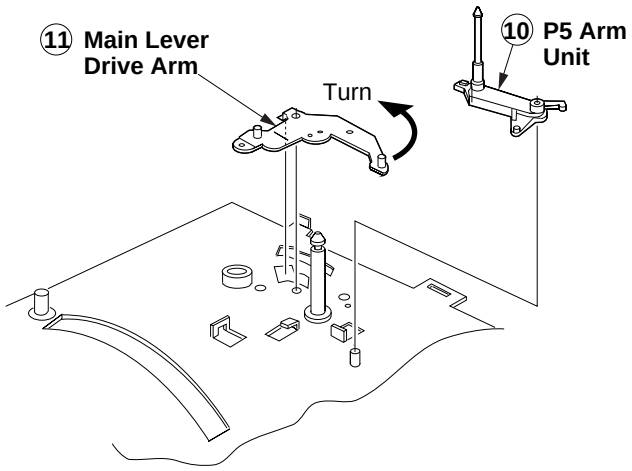


Fig. J7-1

Reassembly Notes

1. **Alignment of Main Lever Drive Arm**
   1) Install the Main Lever Drive Arm so that the hole (C) is aligned with the hole on the chassis Through hole (C)) as shown.

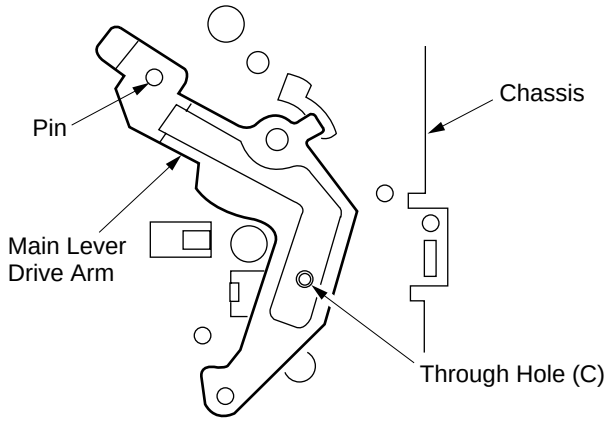


Fig. J7-2

T Brake Unit, Changing Lever A, and T Reel Table

Disassembly Procedure

1. Remove the T Brake Unit while releasing Locking Tab (E) located under the chassis.
2. Remove Cut Washer (A). Then, pull up on the Changing Lever A and remove.
3. Pull up on the T Reel Table.

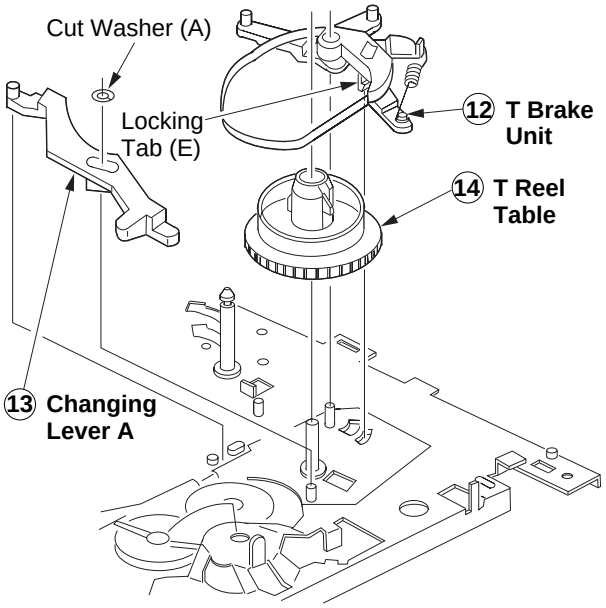


Fig. J8-1

Reassembly Notes

1. **How to distinguish between S Reel Table and T Reel Table**

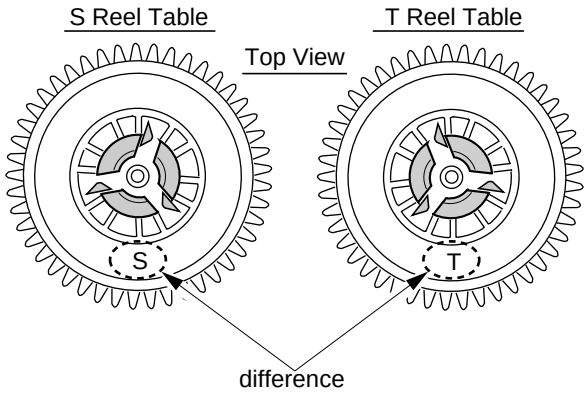


Fig. J8-2

2. Cut Washer (A) is not reusable. Install a new one.

Full Erase Head, Tension Arm Unit, S Spring Arm, and S Reel Table

Disassembly Procedure

1. Turn the Full Erase Head fully counterclockwise while releasing Locking Tab (F) as shown. Then remove it.
2. Unhook Spring (A).
3. Remove the Tension Arm Unit by pulling it up while releasing 2 Locking Tabs (G).
4. Remove the S Spring Arm while releasing Locking Tab (H).
5. Pull up on the S Reel Table.

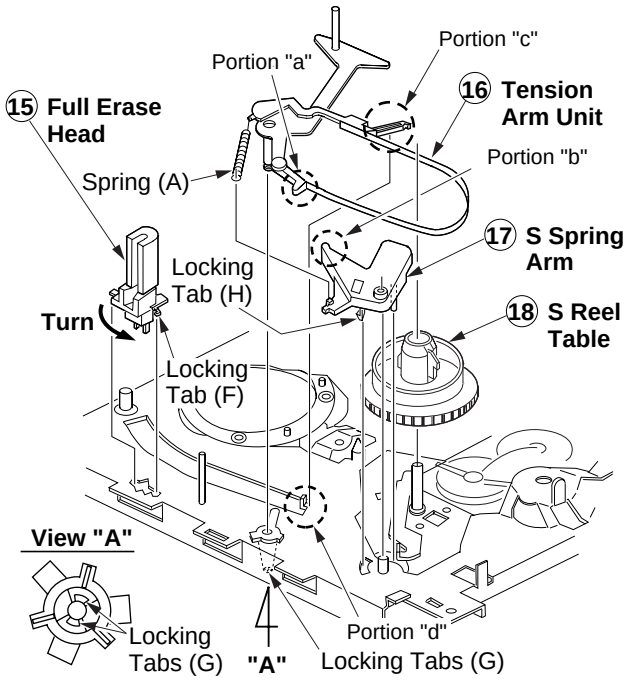


Fig. J9-1

Reassembly Notes

1. **Confirmation/Adjustment of Tension Arm Unit**
   1) When installing Tension Arm Unit and S Spring Arm, confirm "a," "b," "c," and "d" portion are in the proper position as shown.

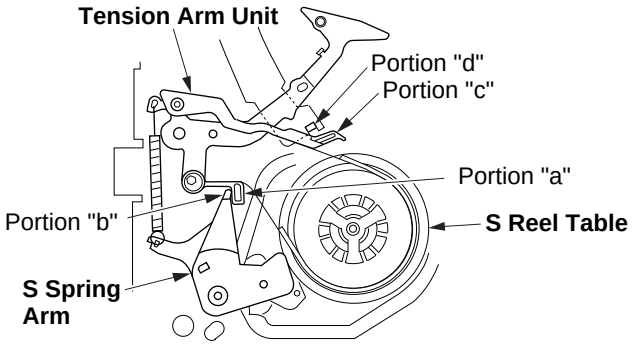


Fig. J9-2

   2) After installing, perform the "Tension Post Adjustment" procedures.

S Brake Arm Unit, Main Lever Guide, Loading Post Base -S, and Loading Post Base -T Unit

Disassembly Procedure

1. Remove the S Brake Arm Unit while releasing 2 Locking Tabs (I).
2. Remove the Main Lever Guide while releasing Locking Tab (J).
3. Slide the Loading Post Base -S and T Units to the end of the guide slots to remove.

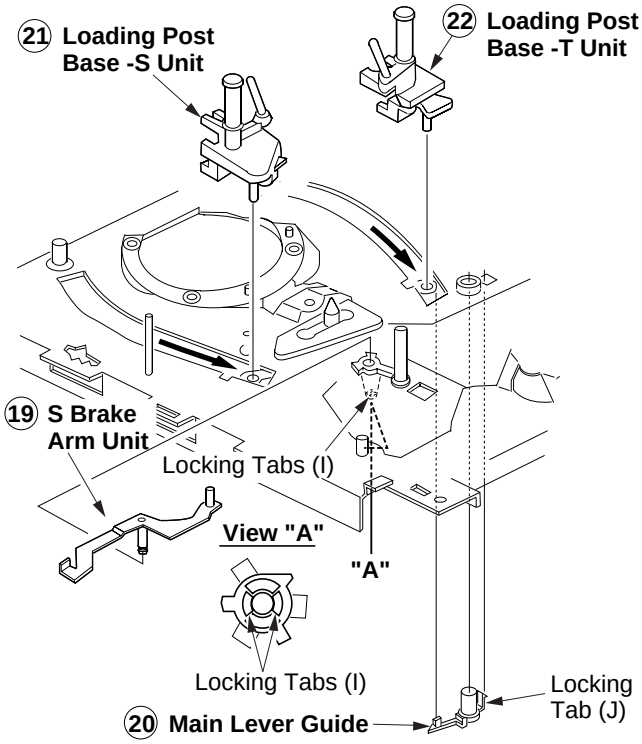


Fig. J10

Reassembly Notes

1. **Adjustment of Loading Post Base -S Unit and Loading Post Base -T Unit**
   1) After installing, perform the "P2 and P3 Post Height Adjustment" procedures and "Tape Interchangeability Adjustment" procedures.

Capstan Rotor Unit, Capstan Holder Unit, and SS Brake Arm Unit

Disassembly Procedure

1. Remove the Capstan Belt.
2. Cut the Stopper with a cutter to remove.
3. Pull up on the Capstan Rotor Unit.
4. Remove 3 Screws (B). Then remove the Capstan Holder Unit.
5. Unhook Spring (B).
6. Turn the SS Brake Arm Unit so that the Tab (A) lines up with the niche. Then, remove the SS Brake Arm Unit.

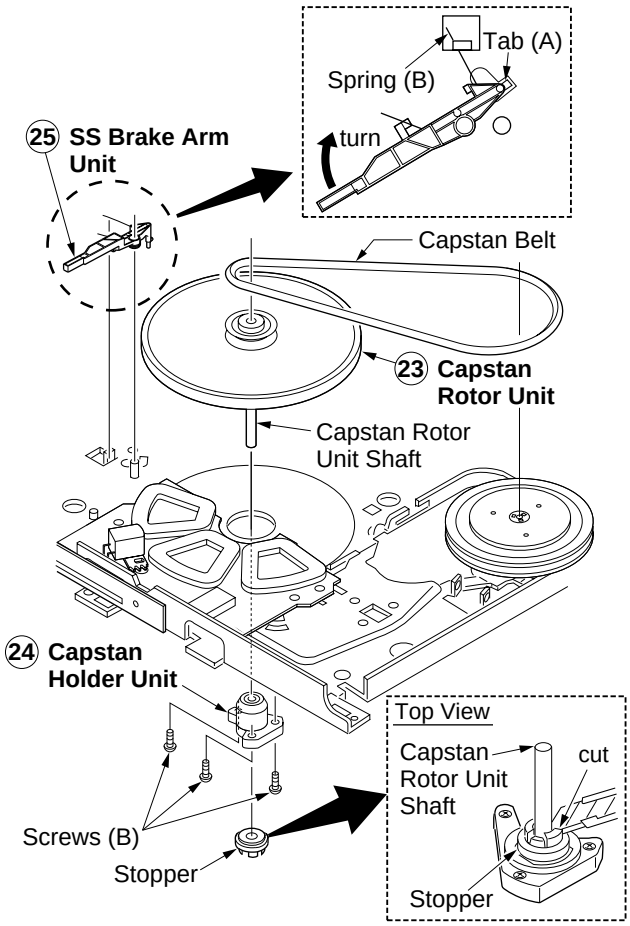


Fig. J11-1

Reassembly Notes

1. **Installation of Capstan Rotor Unit**
   1) Insert the Capstan Rotor Unit Shaft into the hole of the Capstan Holder Unit.
   2) Place a support under the Capstan Rotor Unit shaft. Install the Stopper. Be careful not to scratch the shaft or Capstan Holder Unit.
   3) Remove the support. Press the top end of the shaft down so that the Stopper is properly positioned. You should be able to move the shaft up and down slightly when properly positioned.

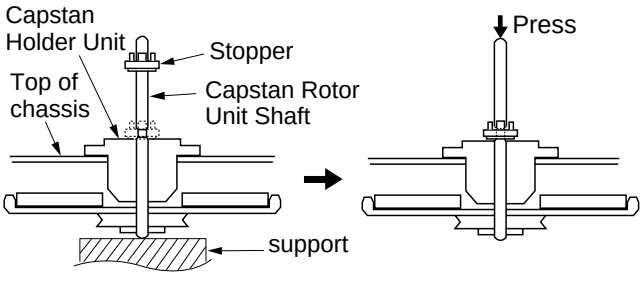


Fig. J11-2

2. **Capstan Rotor Kit**
   Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Rotor Kit only. (Kit No. VXPS0382K2) They are not reusable. Install all new parts.
   Because even invisible scratches on the Capstan Rotor Unit shaft and the Capstan Holder Unit, made when cutting the Stopper, could cause tape path instability.

Junction C.B.A., Capstan Stator Unit, Sub Rotor, and PCB Holder

Disassembly Procedure

1. Remove 2 Screws (C).
2. Unsolder P2532 on the Junction C.B.A. Then, remove the Junction C.B.A.
3. Remove Screw (D) and 2 Screws with Washers (D), (E). Then, remove Capstan Stator Unit, Sub Rotor, and PCB Holder.

CAUTION:

When removing Capstan Stator Unit, avoid touching IC2501 on the Capstan Stator Unit because it is **HOT** during operation.

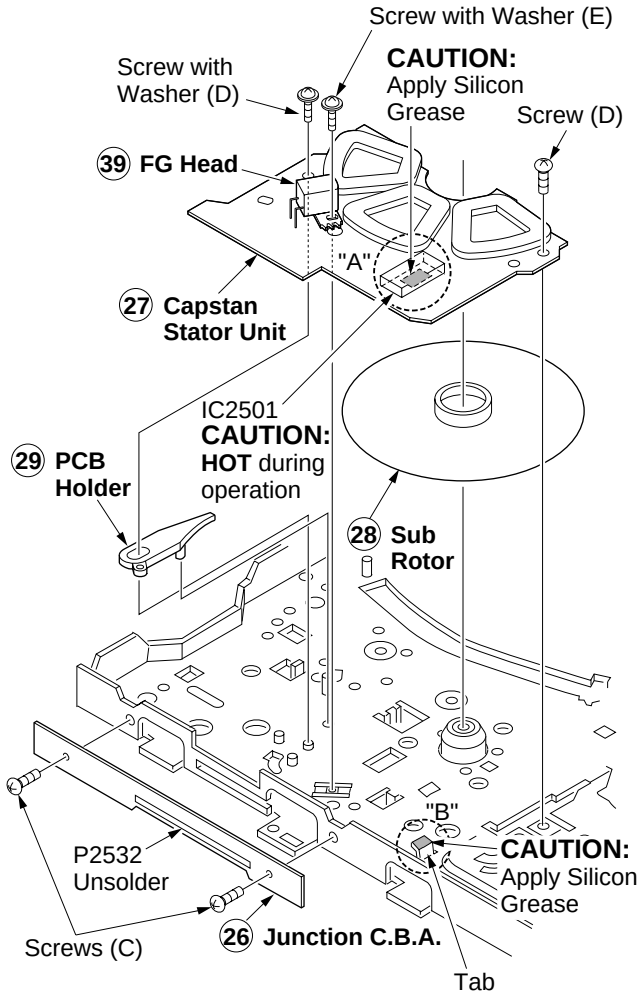


Fig. J12-1

Reassembly Notes

1. **Application of Silicon Grease**

CAUTION

When installing the IC2501 or Capstan Stator Unit, be sure to apply Silicon Grease (VFK1301) as shown. Be careful not to touch other parts with greased portion to prevent grease depletion.

Silicon Grease Application

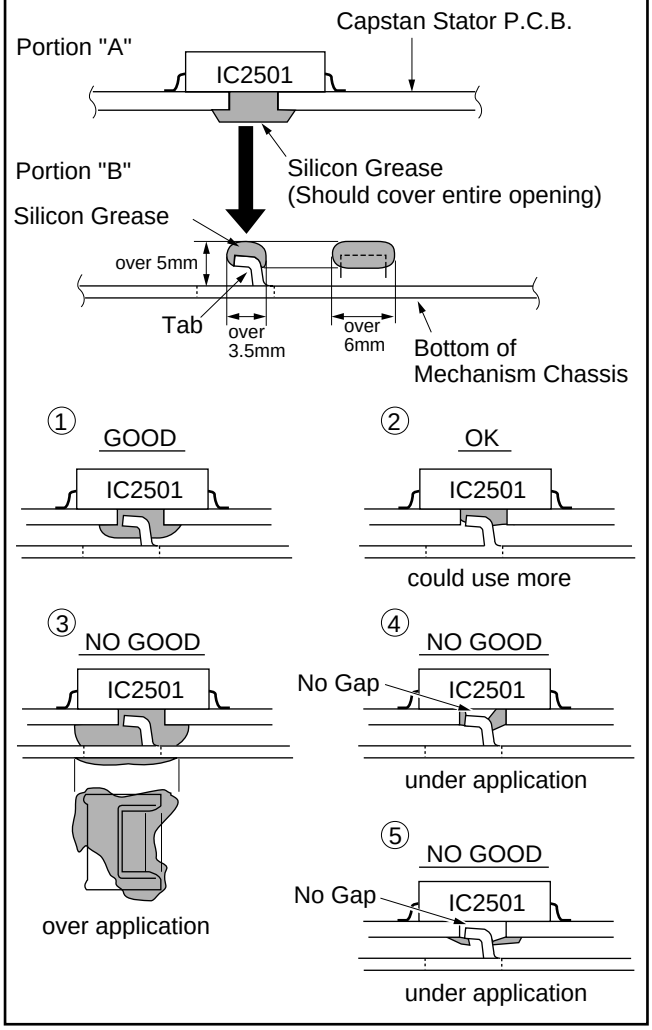


Fig. J12-2

2. **Capstan Stator Kit**
   1) Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit only (Kit No. VEMS0316K2).
   However, IC2501(AN3845SC) is available separately as a replacement part.
   Capstan Rotor Unit, Capstan Holder Unit, and Stopper are not reusable. Install all new parts.
   Because even invisible scratches on the Capstan Rotor Unit shaft and the Capstan Holder Unit, made when cutting the Stopper, could cause tape path instability.
3. **Adjustment of FG Head**
   1) After installing, perform the "FG Head gap Adjustment" procedures.

T Loading Arm Unit and S Loading Arm Unit

Disassembly Procedure

1. Remove the T Loading Arm Unit by pulling it up while releasing Locking Tab (K).
2. Pull up on the S Loading Arm Unit.

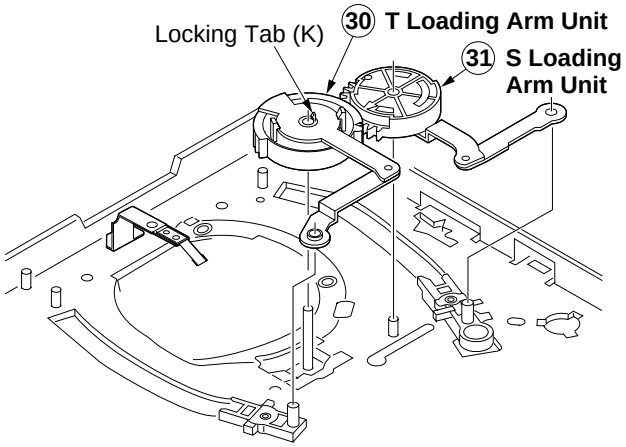


Fig. J13-1

Reassembly Notes

1. **Alignment of Loading Rack Unit, T Loading Arm Unit, and S Loading Arm Unit**
   1) Slide the Loading Rack Unit so that the holes on it and the holes on the chassis line up properly.
   2) Install the S Loading Arm Unit onto the Chassis.
   3) Install the T Loading Arm Unit so that the triangle-shaped indent is aligned with the arrow on the S Loading Arm Unit as shown. Confirm that each hole on the T Loading Arm Unit, Chassis, and Loading Rack Unit are through holes.

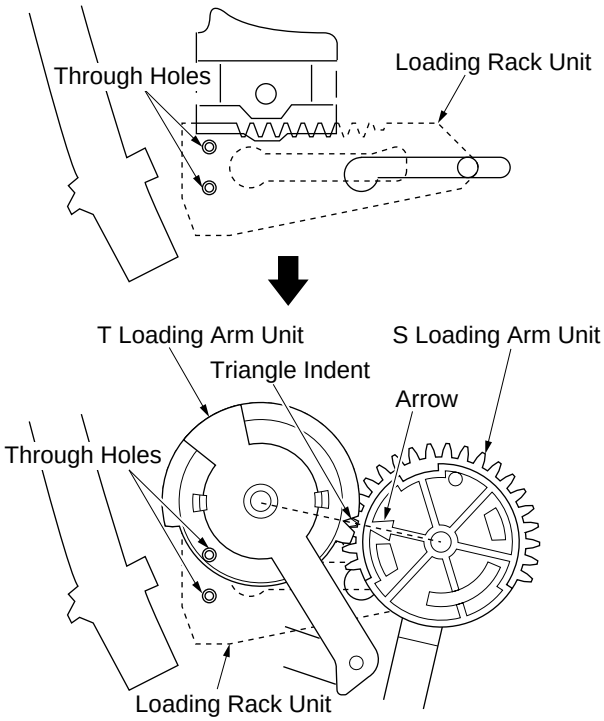


Fig. J13-2

Center Clutch Unit, Changing Gear Spring, Changing Gear, Changing Lever-B, and Idler Arm Unit

Disassembly Procedure

1. Remove Cut Washer (B). Then remove the Center Clutch Unit, Changing Gear Spring, and Changing Gear.
2. Remove Changing Lever -B so that the 2 Mounting Holes clear Mounting Pins.
3. Pull up on the Idler Arm Unit.

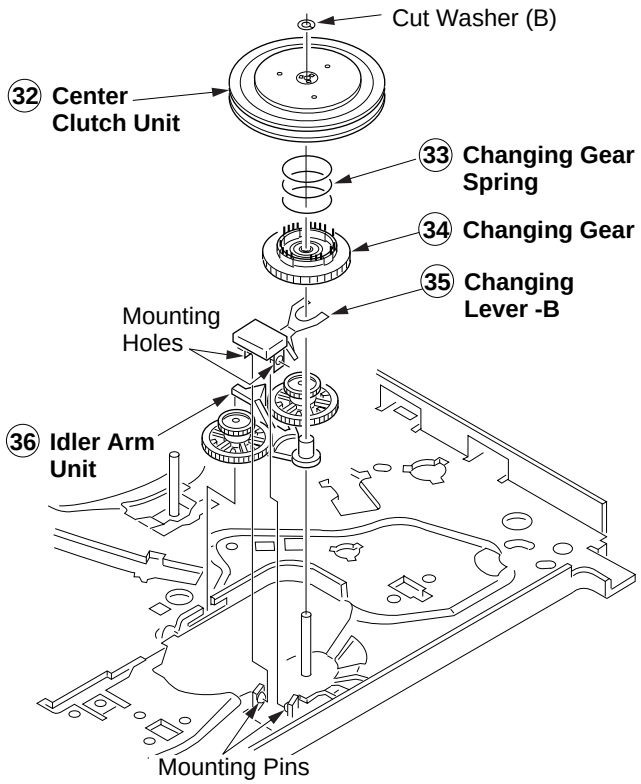


Fig. J14-1

Reassembly Notes

1. **Installation of Center Clutch Unit**
   1) Fit the Center Clutch Unit into the Changing Gear as shown.

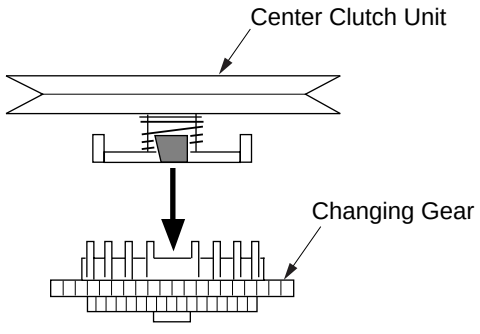


Fig. J14-2

2. Cut Washer (B) is not reusable. Install a new one.

Loading Rack Unit

Disassembly Procedure

1. Slide the Loading Rack Unit as indicated by the arrow. Then, pull up on the Loading Rack Unit.

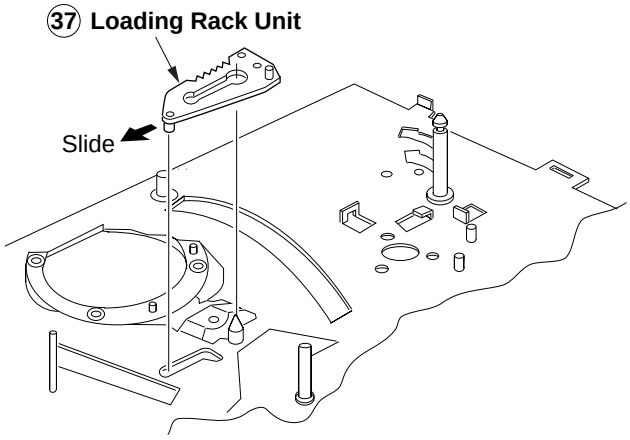


Fig. J15

Reassembly Notes

1. **Alignment of Loading Rack Unit**
   1) When installing Loading Rack Unit, refer to Reassembly Notes of "T Loading Arm Unit and S Loading Arm Unit."

DISASSEMBLY/ASSEMBLY PROCEDURES OF CASSETTE UP ASS'Y

Top Plate, Wiper Arm Unit, and Holder Unit

Disassembly Procedure

1. Remove Top Plate by releasing 2 Locking Tabs (A) on the left side and 2 Locking Tabs (B) on the right side of the Top Plate.
2. Remove Wiper Arm Unit by releasing 2 Locking Tabs (C). Then, remove the Holder Unit.

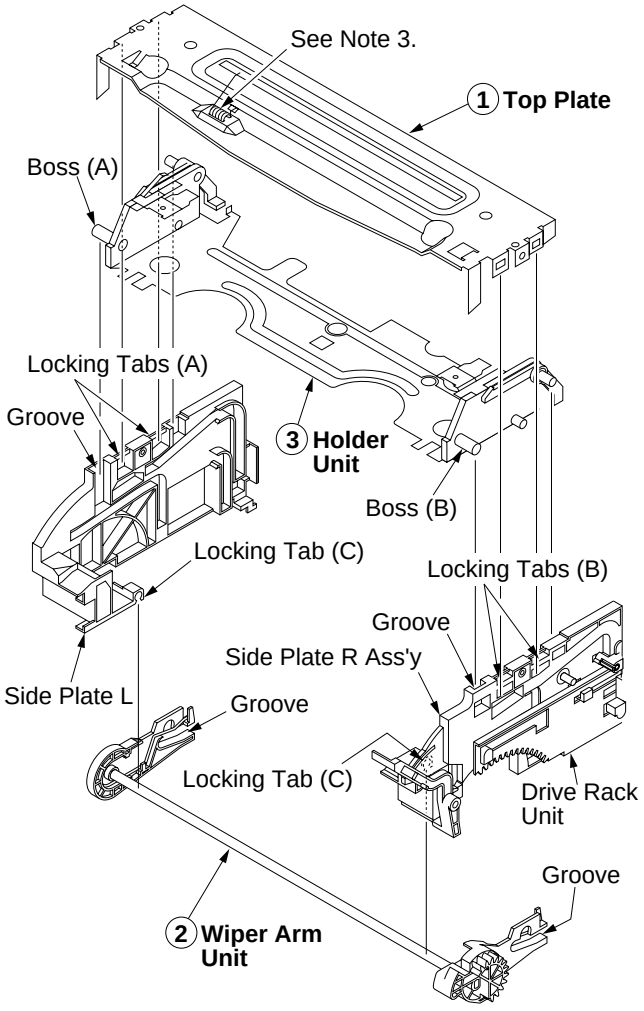


Fig. K1-1

Reassembly Notes

1. **Alignment of Wiper Arm Unit and Drive Rack Unit**
   1) Slide the Drive Rack Unit to the far right as indicated by the arrow.
   2) Install the Wiper Arm Unit so that the hole on the Wiper Arm Unit is aligned with the hole on the Drive Rack Unit.

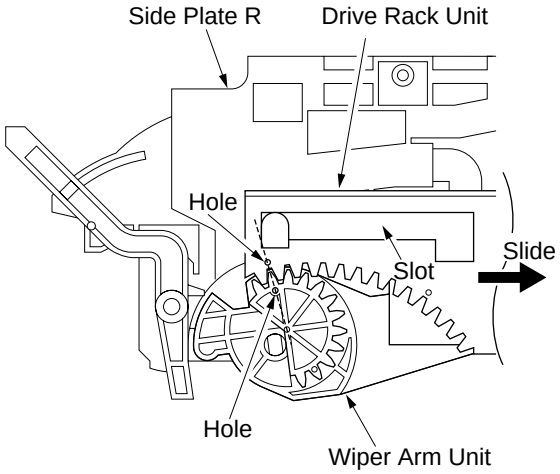


Fig. K1-2

2. **Installation of Holder Unit**
   1) Turn the Wiper Arm Unit so that the grooves on each end are aligned with the each groove on Side Plate L and R.
   2) Insert Holder Unit boss (A) and (B) into the grooves (See Fig. K1-1 on previous page).
   3) Finally, in the EJECT Position, confirm that the protrudence on the Wiper Arm Unit is aligned with the indentation on the Drive Rack Unit.

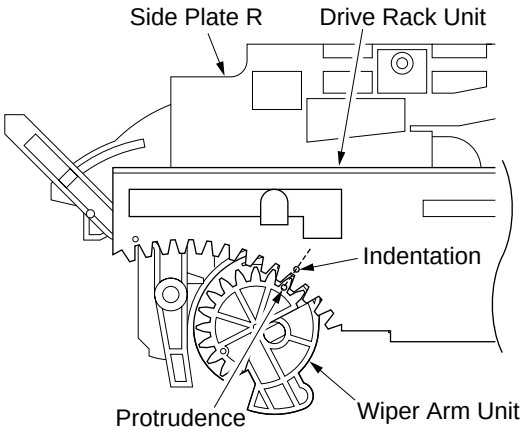


Fig. K1-3

3. As an ESD countermeasure, make sure the spring is in contact with Top Cover.

Sensor Cover, Opener Lever, and Drive Rack Unit

Disassembly Procedure

1. Remove the Sensor Cover by releasing Locking Tab (D).
2. Remove the Opener Lever by releasing 2 Locking Tabs (E). Then remove the Drive Rack Unit.

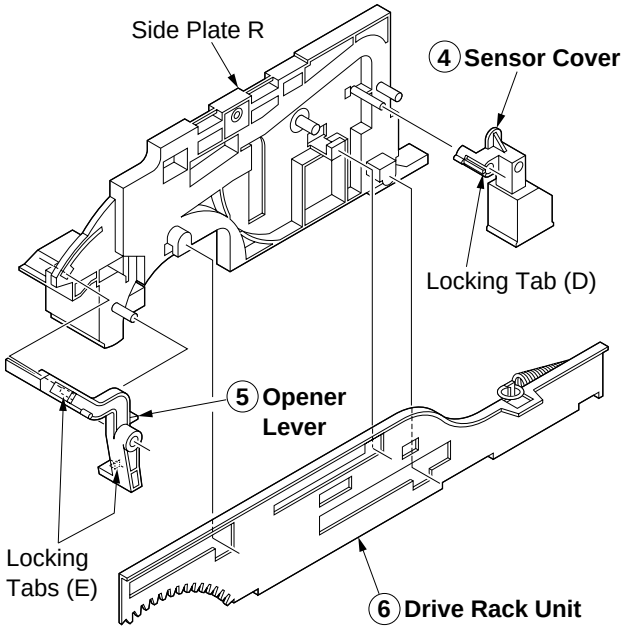
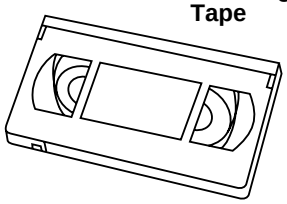


Fig. K2

ADJUSTMENT PROCEDURES

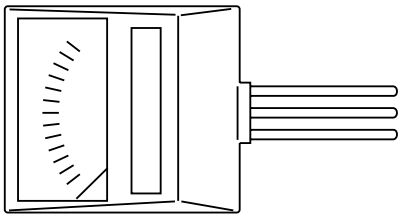
SERVICE FIXTURES AND TOOLS

VFMS0003H6 **VHS Alignment Tape**

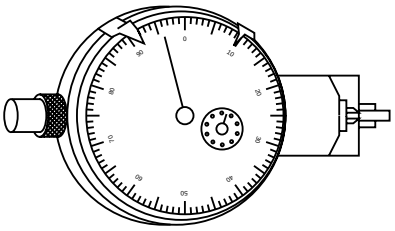


Video	Color Bar & Monoscope
Audio	6kHz(MONO)

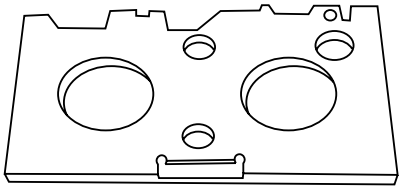
Back Tension Meter (Made in USA., Purchase Locally)



VFKS0009 **Reel Table Height Fixture**

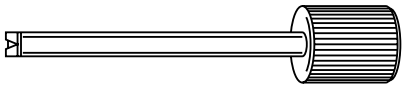


VFKS0010 **Post Adjustment Plate**

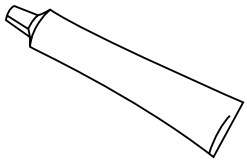


VFKS0081 **Grease**

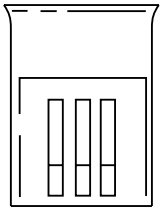
VFK0329 **Post Adjustment Driver**



VFK1301 **Silicon Grease**



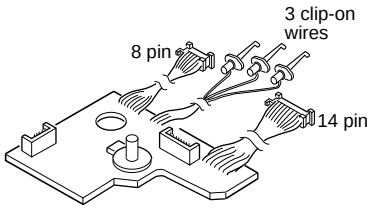
VFK27 **Head Cleaning Stick**



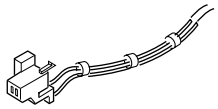
VFK0330 **H-Position Adjustment Driver**

VUZS0002 **Extension Cable Kit**

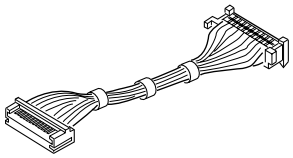
Mode Select SW. Ass'y
(VUVS0001)



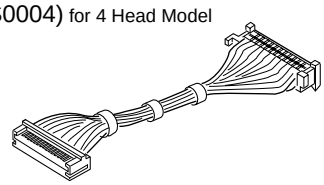
Extension Cable -1
(VUVS0002)



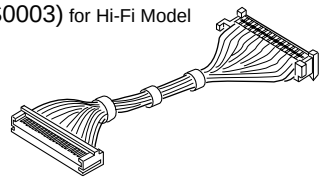
Extension Cable -2
(VUVS0005) for 2 Head Model



Extension Cable -2
(VUVS0004) for 4 Head Model



Extension Cable -2
(VUVS0003) for Hi-Fi Model



MECHANICAL ADJUSTMENT

CLEANING PROCEDURE FOR THE UPPER CYLINDER UNIT

1. While slowly turning the Upper Cylinder Unit counterclockwise by hand, gently rub the Video Heads with a Head Cleaning Stick (VFK27) moistened with Ethanol. When using a Cleaning Cassette, make sure to use "DRY" type only and be aware that excessive use can shorten head life.

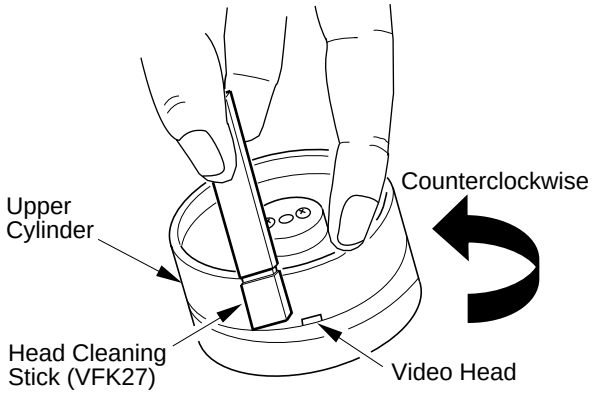


Fig. M1

Note:

1) Do not rub vertically or apply excess pressure to the Video Heads.
   Do not turn the Upper Cylinder Unit clockwise while cleaning.
2) After cleaning, use a Dry Head Cleaning Stick (VFK27) to remove any Ethanol remaining on the cylinder tape path. Otherwise, tape damage will occur.

ADJUSTMENT PROCEDURES

TENSION POST ADJUSTMENT

Purpose:
To maintain a constant tape tension so that the tape runs with stability by performing preliminary adjustment.

Symptom of Misadjustment:
1) If the adjusted value is below the specification, the tape tension is not sufficient, thus causing a tape slack.
2) If the adjusted value is above the specification, the tape tension is too high, thus causing tape damage.

Equipment Required:
2 mm Hex. Wrench ..... (Purchase Locally)

1. Remove the Cassette Up Ass'y.
2. Plug the AC plug into an AC outlet.
3. Place the unit in the Service Mode. Refer to "Service Mode" in the "Service Notes" section of this manual.
   The power comes on and the unit goes into the PLAY Mode.
4. Using a (2 mm) Hex. Wrench, adjust the nut on the Tension Adjust Piece (counterclockwise only) so that there is a space of 1 mm between the left edge of the P1 Post and the right edge of the Tension Post. Make sure that the center of the Hex. Wrench hole is within Area "A".
5. After adjustment, remove the Hex. Wrench.
6. Press the STOP/EJECT button to place the unit in the EJECT Mode.
7. Release the unit from the Service Mode. Refer to "Service Mode" in the "Service Notes" section of this manual.

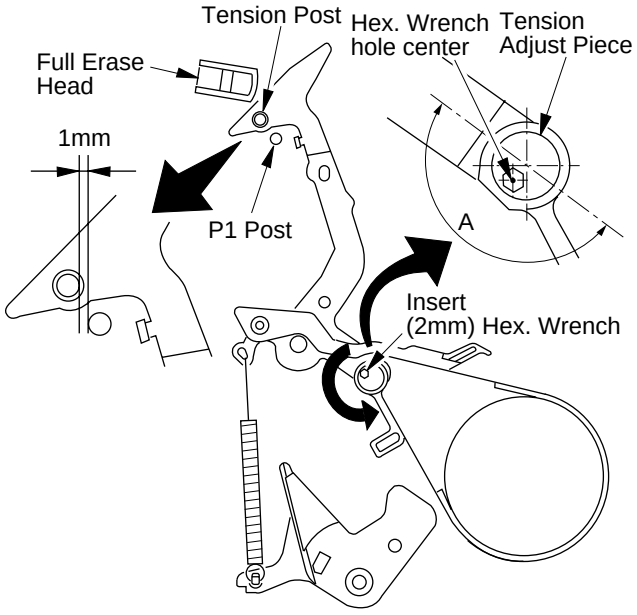


Fig. M2

BACK TENSION CONFIRMATION

Purpose:
To fine adjust the Back Tension so that the tape runs smoothly with a constant tension.

Symptom of Misadjustment:
1) If the tape tension is less than the specified value, the tape cannot come into proper contact with the Video Heads, resulting in poor picture playback.
2) If the tape tension is too high, the tape will soon be damaged.

Measurement Procedure

Equipment Required:
Back Tension Meter (Made in U.S.A., Purchase Locally)
VHS Cassette Tape (120-Minute Tape)

Specification ..... 25 +/- 2.5g

1. Play back a T120 cassette tape from the beginning for approx. 10 to 20 seconds to stabilize tape movement.
2. Insert a Tension Meter into tape path and measure the back tension.
3. If the reading is out of specification, make sure that there is no dust or foreign material between the Tension Band of Tension Arm Unit and the Reel Table.
   If cleaning does not correct the tension measurement, replace the Tension Spring and the Tension Arm Unit.

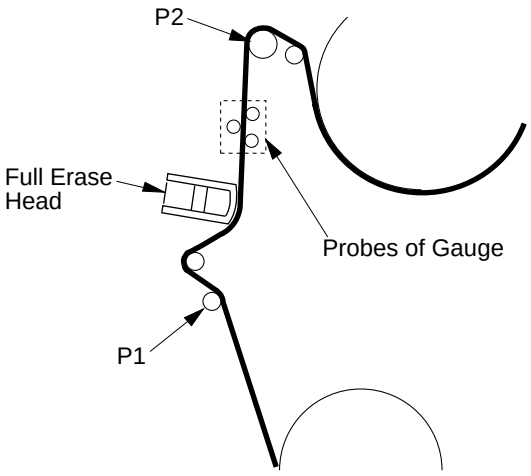


Fig. M3-1

Note:
1) Be sure that the three probes of the meter are all in solid contact with the tape, but not touching any other parts of the mechanism.
2) It is recommended that measurements be repeated at least three (3) times because the tension meter is very sensitive to external vibrations.

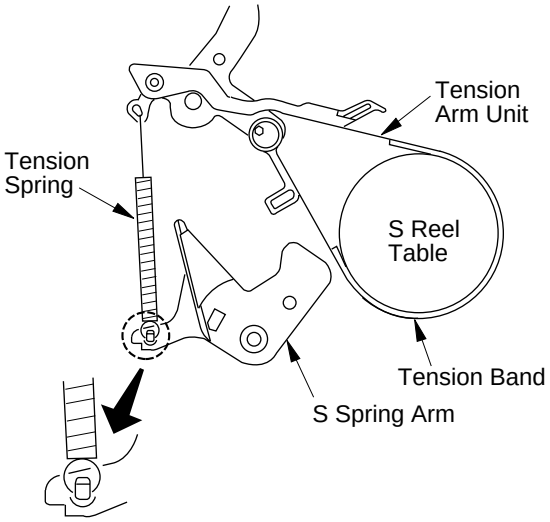


Fig. M3-2

FG HEAD GAP ADJUSTMENT

Purpose:
To properly pick up the FG Signal.

Symptom of Misadjustment:
If the FG Signal is not properly picked up, Servo Operation cannot be achieved.

Equipment Required:
Oscilloscope

Specification ..... 0.13 +/- 0.02mm

1. Remove the VCR Chassis Unit and then place it upside down.
2. Remove the Main C.B.A.
3. Slightly loosen Black Screw (A). Then set the Screwdriver (#1 or #2 Phillips Driver) into the Hole (A). Turn the screwdriver counterclockwise until the FG Head touches the rotor. Then turn it slightly clockwise to the clearance as specified.
4. Tighten Black Screw (A).
5. Reinstall the Main C.B.A.

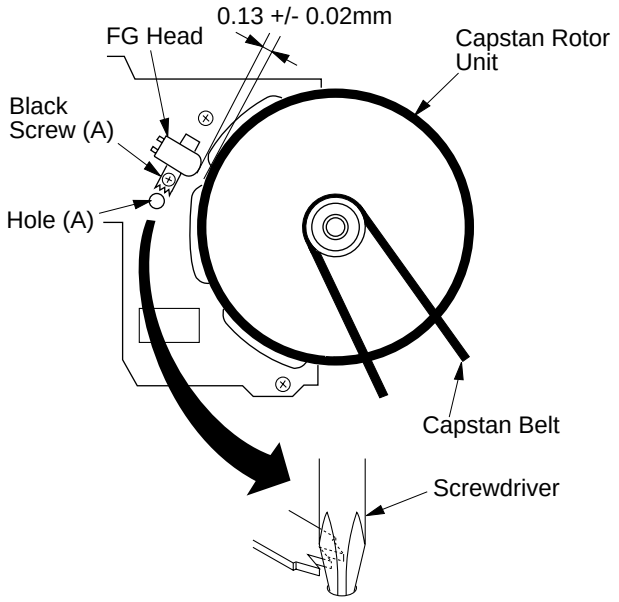


Fig. M4

Note:
Do not touch the outside circumference of the rotor surface with any tool and keep magnetic material away from the rotor magnet (especially metal particles).

Confirmation of Signal Level
1) Supply a Video Signal to the Video Input Jack.
2) Insert a cassette tape and place the unit in SLP recording mode.
3) Connect the oscilloscope to Pin 7 of P2502 on the Capstan Stator Unit.
Confirm that the signal level is greater than 15mVp-p.

P2 AND P3 POST HEIGHT ADJUSTMENT (PRELIMINARY ADJUSTMENT)

Purpose:
To properly align the position of the tape with the Cylinder Lead so that the tape runs with stability.

Symptom of Misadjustment:
1) Since the Envelope Waveform Signal cannot be tracked properly, the Playback picture will be poor.
2) Since the tape does not run smoothly, the tape will eventually be damaged.
3) Tape interchangeability is poor.

Equipment Required:
Post Adjustment Plate ..... (VFKS0010)
Reel Table Height Fixture ..... (VFKS0009)
Post Adjustment Driver ..... (VFK0329)

1. Remove the Cassette Up Ass'y.
2. Position the Post Adjustment Plate over the reels.
3. Place the fixture on the Post Adjustment Plate and zero the fixture (DO NOT use the cut-out portion of the post adjustment plate.)

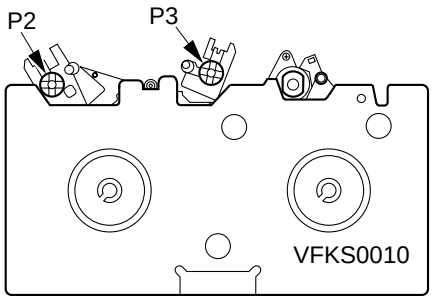


Fig. M5-1

4. Lower each post below the top edge of the Post Adjustment Plate. Then, raise each post until it contacts the foot of the Reel Table Height Fixture. For proper adjustment, the foot of that should be positioned as shown.

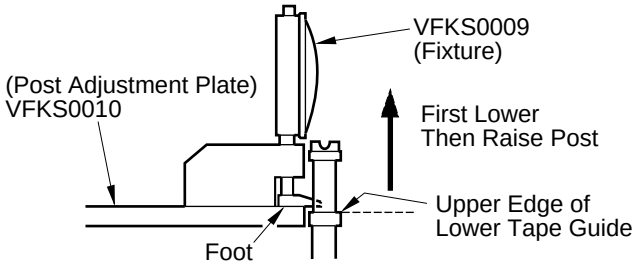


Fig. M5-2

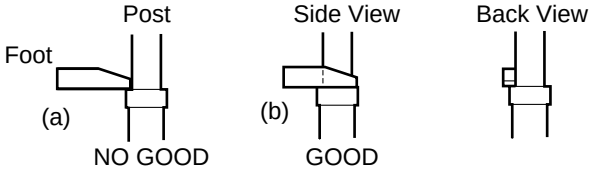


Fig. M5-3

CAUTION:
1) Overtightening P2 and P3 posts may cause the threads to strip.
2) Upon completion of this procedure, perform the "Envelope Output Adjustment" procedures.

TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)

Note:
To perform these adjustment/confirmation procedures, set the tracking to the neutral position.

Equipment Required:
Dual Trace Oscilloscope
VHS Alignment Tape ..... (VFMS0003H6)
Post Adjustment Driver ..... (VFK0329)
H-Position Adjustment Driver ..... (VFK0330)

1. ENVELOPE OUTPUT ADJUSTMENT

Purpose:
To achieve a satisfactory picture and secure precise tracking.

Symptom of Misadjustment:
If the envelope is output poorly, much noise will appear in the picture. Then the tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control circuit.

Equipment Required:
Post Adjustment Driver ..... (VFK0329)

1. Connect the oscilloscope to TP3002 on the Main C.B.A. Use TP6205 as a trigger.
2. Place a jumper between TP6003 and +5V(TP6009) on the Main C.B.A. to defeat Auto Tracking.
3. Eject the tape and insert it again to access the Neutral Tracking position.
4. Play back the alignment tape and confirm that the RF envelope appears.
5. With Post Adjust Driver, adjust P2 and P3 post height so that the envelope waveform ($V_1/V\text{-max.}$ is 0.7 or more.) becomes as flat as possible (No envelope drop). If the envelope drop appears on the left-half of the waveform, adjust P2 post height. If the envelope drop appears on the right-half of the waveform, adjust P3 post height.

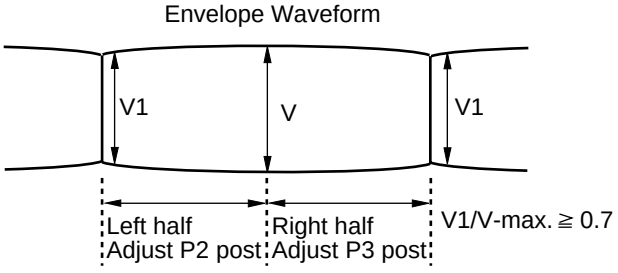


Fig. M6-1

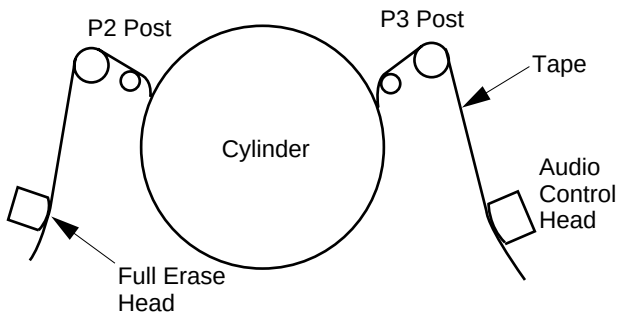


Fig. M6-2

Note:
To confirm adjustment, press the Tracking Control Up or Down button on remote control. Make sure that the envelope waveform remains flat. If not, readjust P2 and/or P3 post heights.

6. After adjustment, confirm that the tape travels without curling at P2 and P3 posts.
7. Remove the jumper after completing the adjustment procedure.

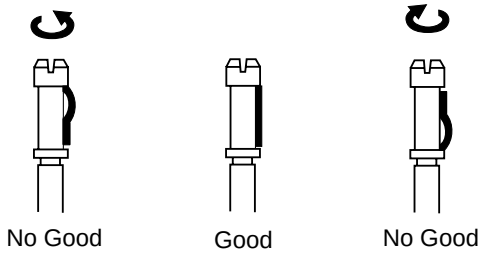


Fig. M6-3

Note:
Overtightening P2 and P3 posts may cause the threads to strip.

2. AUDIO CONTROL HEAD TILT ADJUSTMENT

Purpose:
To confirm that the tape runs smoothly. In particular, confirm that the tape properly picks up the Audio Signal at the upper part of the head and the Control Signal at the lower part of the head.

Symptom of Misadjustment:
If the tilt of the Audio Control Head is poorly adjusted, the tape will eventually be damaged. An intermittent Blue screen may be seen in Playback.

1. Play back a T120 cassette tape and check that the tape travels smoothly between the upper and lower guides of the P4 post.
2. If necessary, adjust Black Screw (B) clockwise until the tape begins to curl at the lower edge of the P4 post. Then adjust the screw counterclockwise until the curling is eliminated.

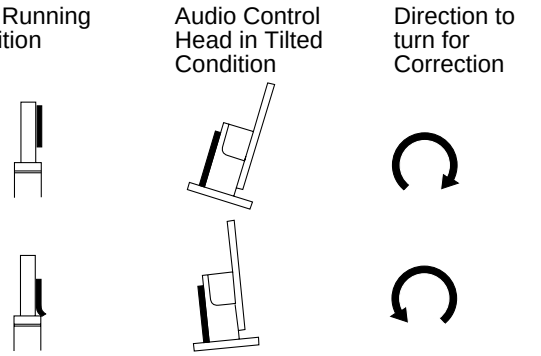


Fig. M7

3. AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

The height of the Audio Control Head replacement part is preset at the factory.

Purpose:
To be sure the tape runs properly along the Control Head.

Symptom of Misadjustment:
If the control signal is not properly picked up, Servo Operation cannot be achieved. A Blue screen will be seen in Playback.

This confirmation is required when the Audio Control Head is replaced.

1. Play back a T120 cassette tape and check that the lower edge of the tape runs approximately 0.25 mm above the lower edge of the Audio Control Head.
2. If necessary, adjust Black Screws (A) and (B) clockwise to lower the tape or counterclockwise to raise.

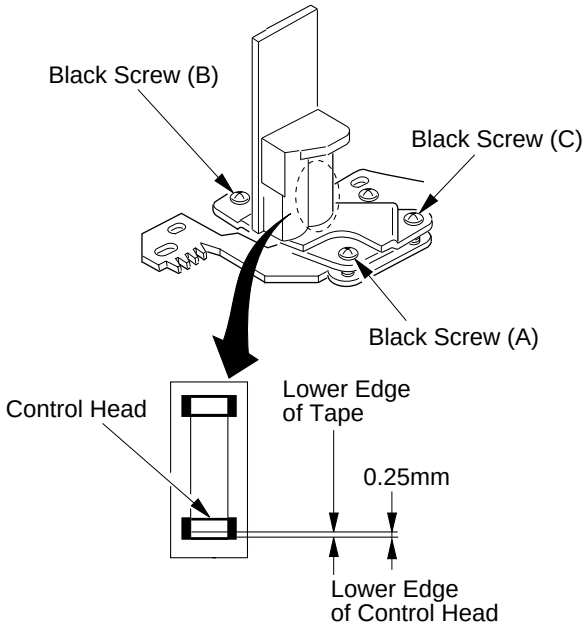


Fig. M8

4. AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

Purpose:
To adjust the position and height of the Audio Control Head so that it meets the tape tracks properly.

Symptom of Misadjustment:
If the position of the Audio Control Head is not properly adjusted, the Audio S/N Ratio is poor.

1. Connect the oscilloscope to the TP4002 on the Main C.B.A.
2. Play back the 6kHz Monaural Audio portion of the alignment tape.
3. Adjust Black Screw (C) on the Audio Control Head base so that the output level is at maximum.

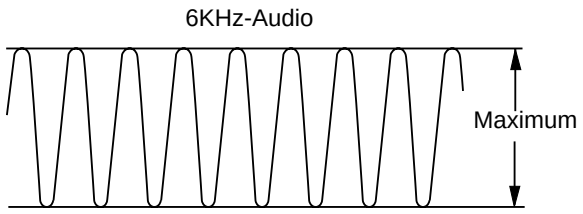


Fig. M9

4. Confirm the height of the Audio Control Head is proper. If not, readjust Black Screws (A) and (B).

5. AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT

Purpose:
To adjust the Horizontal Position of the Audio Control Head.

Symptom of Misadjustment:
If the Horizontal Position of the Audio Control Head is not properly adjusted, a maximum envelope cannot be obtained at the Neutral Position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP3002 on the Main C.B.A. Use TP6205 as a trigger.
2. Place a jumper between TP6003 and +5V(TP6009) on the Main C.B.A. to defeat Auto Tracking.
3. Eject the tape and insert it again to access the Neutral Tracking position.
4. Play back the alignment tape and confirm that the RF envelope appears.
5. If adjustment is required, loosen the Black Screw (D) and tighten it lightly. Set the H-Position Adjustment Driver into the Hole (A). Then slowly turn the fixture either clockwise or counterclockwise so that the envelope is at maximum.
6. Before finding the center of the maximum period of the envelope, rotate the fixture back and forth slightly to confirm the limits on either side of the maximum period.
7. Push the Tracking Control Up Button (on the Remote Control) several times (count the number of times pushed) until the maximum envelope is reduced to 1/2.
8. Reset the tracking to the neutral position by ejecting the tape and reinserting it. Push the Tracking Control Down Button (on the Remote Control) several times (count the number of times pushed) until the maximum envelope is reduced to 1/2.
9. If the number of pushing is not the same, then loosen the Black Screw (D) and set the H-Position Adjustment Driver into the Hole (A) to find the center point. Then repeat the above procedure to determine the center point.
10. Tighten Black Screw (D).
    (The Black Screw (D) should be in the approximate center of the hole.)
11. Remove the jumper between TP6003 and +5V(TP6009).

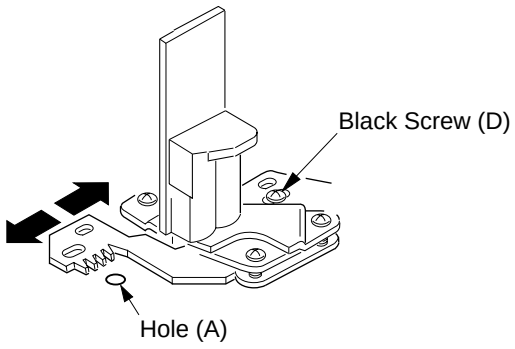


Fig. M10

Note:
Old type of H-Position Adjustment Driver (VFK0136) can be used for this adjustment.

ELECTRICAL ADJUSTMENT

Note:

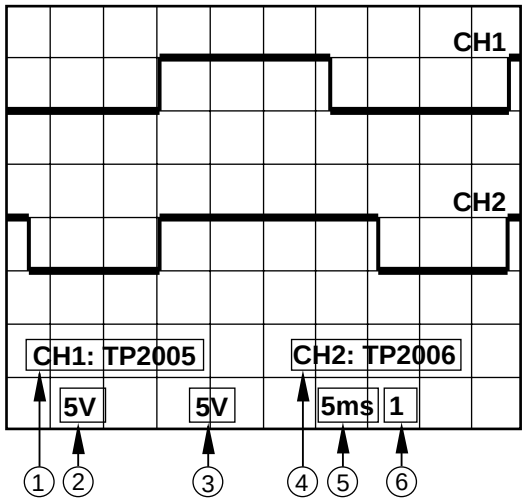
Picture Tube Ass'y is preadjusted at factory and should not be disturbed unless absolutely necessary.

TEST EQUIPMENT

To do all of these electrical adjustments, the following equipment is required.

1. Dual-Trace Oscilloscope
   Voltage Range : 0.001 to 50V/Div.
   Frequency Range : DC to 50MHz
   Probes : 10:1, 1:1
2. NTSC Video Pattern Generator
3. MTS/SAP Signal Generator
   (TV Multi-Channel Sound Modulator (U.S.A.))
4. Frequency Counter
   Frequency Range : 0 to 150MHz
5. Plastic Tip Driver and Non-Metal Driver
6. Isolation Transformer (Variable)
7. VHS Alignment Tape (VFMS0003H6)
8. White Pattern Generator

HOW TO READ THE ADJUSTMENT PROCEDURES



1. Connecting Point
3. Volts/DIV
5. Time/DIV

2. Volts/DIV
4. Connecting Point
6. Trigger Channel of the Scope
1 : CH1
2 : CH2

Fig. E1

PG SHIFTER ADJUSTMENT

Purpose:
Determine the Video Head Switching Point during Playback.

Symptom of Misadjustment:
May cause Head Switching Noise and/or Vertical Jitter.

Test Point : TP3001 (Main C.B.A.)
TP6205 (Main C.B.A.)
Adjustment : R6201 (Main C.B.A.)
Specification : T = 6 +/- 1H (0.38 +/- 0.06msec.)
Mode : SP Playback
Equipment : Oscilloscope,
VHS Alignment Tape (VFMS0003H6)

1. Connect the channel-1 scope probe to TP3001 and the channel-2 scope probe to TP6205. Trigger from channel-2.
2. Playback the VHS alignment tape and adjust the R6201 (PG SHIFTER) so that the leading edge of the head switching pulse is placed 6H +/- 1H (0.38 +/- 0.06msec.) before the start of the vertical sync pulse.

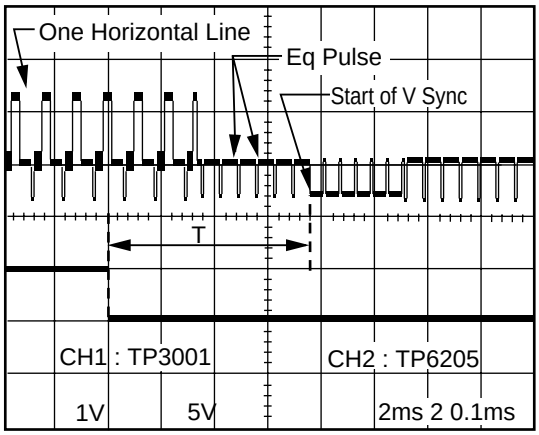


Fig. E2

SEPARATION ADJUSTMENT

Purpose:
To separate the L and R Channels of Stereo Signal.

Symptom of Misadjustment:
The L and R Channels of Stereo Signal will not be separated properly resulting in no stereophonic effect.

Test Point : TP4202 (TV Stereo C.B.A.: Model A)
(Hi-Fi Audio C.B.A.: Model B, C)
Adjustment : R4901 (TV Stereo C.B.A.: Model A)
R4951 (Hi-Fi Audio C.B.A.: Model B, C)
Specification: minimum level
INPUT : Antenna Input Terminal
MTS (ONLY L CH)
300Hz +/- 5Hz
14% or 7% Modulating
Mode : STEREO audio (TV)
Equipment : Oscilloscope, MTS/SAP Signal Generator

1. Connect the RF OUTPUT of the MTS/SAP Signal Generator to the Antenna Input Terminal.
2. Connect the Oscilloscope to TP4202 (R CH).
3. Set to TV mode, and then set to STEREO audio.
4. **(Model: A)**
   Adjust R4901 (SEPARATION ADJ) so that the signal level is minimum.
   (Model: B, C)
   Adjust R4951 (SEPARATION ADJ) so that the signal level is minimum.

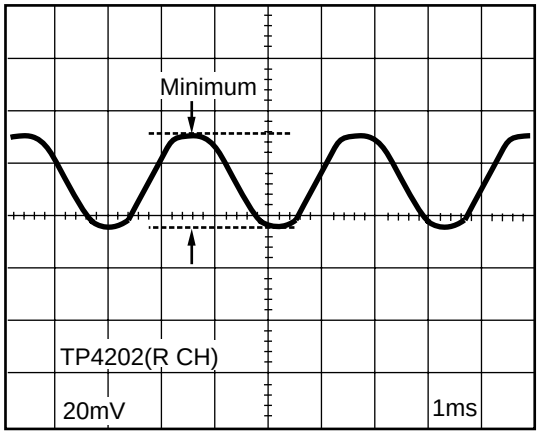


Fig. E3

FM VCO ADJUSTMENT

Purpose:
To set VCO free run frequency.

Symptom of Misadjustment:
Even when stereophony is received, only monaural sound will be output.

Test Point : Pin 4 of P4201,
TP9201 (TV Stereo C.B.A.: Model A)
(Hi-Fi Audio C.B.A.: Model B, C)
Adjustment : R9206 (TV Stereo C.B.A.: Model A)
(Hi-Fi Audio C.B.A.: Model B, C)
Specification: 38.05KHz +/- 50Hz
Input : ----------
Mode : STEREO audio (FM Radio)
Equipment : Frequency Counter

1. Turn the unit "ON."
2. Set to FM Radio mode, and then set to STEREO audio.
3. Turn the unit "OFF."
4. Disconnect Connector PK2 on the TV Main C.B.A.
5. Connect Pin 4 of P4201 to GND.

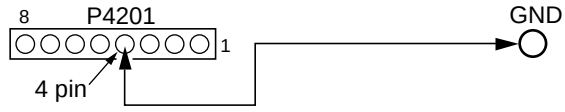


Fig. E4-1

6. Connect TP9201 to GND through a resistor (3.3K ohm). Then, connect Frequency Counter to TP9201.

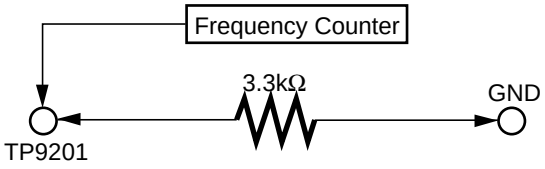


Fig. E4-2

7. Adjust R9206 (FM VCO) so that the frequency is 38.05KHz +/- 50Hz.
8. After this adjustment, connect Connector PK2 and remove the GND Wire and resistor (3.3k ohm) which were connected in step 5 and 6.

EVR (Electronic Variable Register) Adjustment with the remote control

This unit has electronic technology using I²C Bus concept. The following control functions are adjusted by using "On Screen Displays" and the remote control instead of adjusting mechanical controls (VR).

Control functions	Range	Default
SUB COLOR	C0 – FF, 00 – 3F	00
SUB TINT	E0 – FF, 00 – 1F	00
SUB BRIGHT	C0 – FF, 00 – 3F	F0
SUB SHARPNESS	E0 – FF, 00 – 1F	00
R CUT -OFF	00 – 7F	1E
G CUT -OFF	00 – FF	3C
B CUT -OFF	00 – FF	3C
G DRIVE	00 – 7F	40
B DRIVE	00 – 7F	40
SUB CONTRAST	00 – 0F	06
H CENTER	00 – 0F	08
V SIZE	00 – 7F	40

Fig. E5-1 Control Functions

HOW TO ENTER EVR ADJUSTMENT MODE

Press and hold STOP, FF, and VOL DOWN button on the unit together over 5 seconds with no cassette inserted. The adjustment overlay will appear.

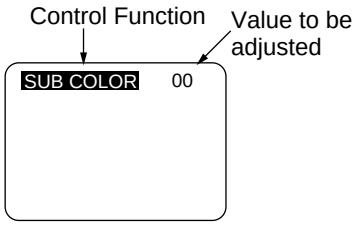


Fig. E5-2

How to adjust:

1. Press CH UP/DOWN key on the remote control to select control function to be adjusted.

Important Note:

Make a note of the original value of the controls before modifying in case the wrong control is adjusted.

2. Press VOL UP/DOWN key on the remote control so that the shaded area moves to the value.

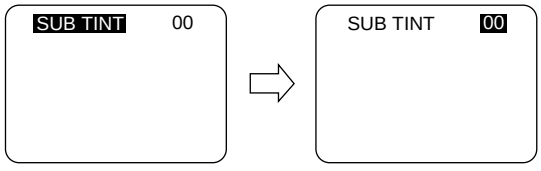


Fig. E5-3

3. Press CH UP/DOWN key on the remote control to adjust the value of the selected control.

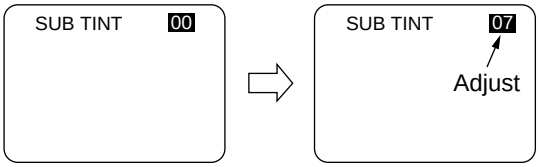


Fig. E5-4

Note:

You can select a desired channel by using the numbered keys on the remote control in EVR adjustment mode.

4. Press VOL UP/DOWN key on the remote control so that the shaded area moves to the control function.

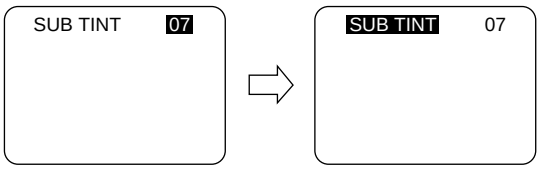


Fig. E5-5

5. Press CH UP/DOWN key on the remote control to select a control function for the next adjustment if necessary.

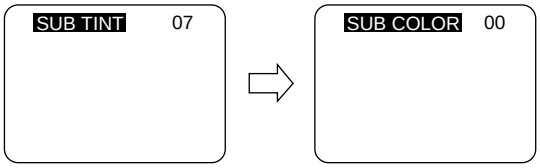


Fig. E5-6

How to release from EVR Adjustment Mode:

Press and hold STOP, FF, and VOL DOWN button on the unit together over 5 seconds again or press the POWER button OFF.
The adjusted value will be written to Memory IC(IC6004).

HOW TO ENTER SERVICE MODE

1. Enter EVR adjustment mode.
2. Press DISPLAY key on the remote control for collapse scan.

Note:

Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value for adjustments you will proceed.

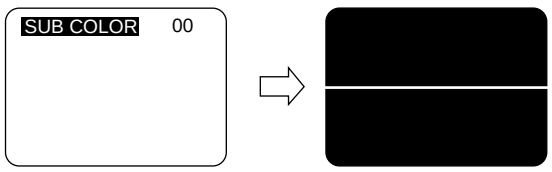


Fig. E5-7

How to release from Service Mode:

Press DISPLAY key again on the remote control.

SUB CONTRAST ADJUSTMENT

Purpose:
To set the optimum sub contrast level.

Symptom of Misadjustment:
The picture is too dark or too light.

Test Point : Pin 5 of PK5 (TV Main C.B.A.)
or TP49 (CRT C.B.A.)
Adjustment : SUB CONTRAST (EVR)
Specification: 2.8 +/- 0.1Vp-p
Input : Video Input Jack
Crosshatch Pattern Signal 1Vp-p
(75 ohm terminated)
Mode : STOP
Equipment : Oscilloscope, NTSC Video Pattern Generator

1. Supply a Crosshatch Pattern Signal to the Video Input Jack.
2. Connect the Oscilloscope to Pin 5 of PK5 on the TV Main C.B.A. or TP49 on the CRT C.B.A.
3. Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the minimum (C0).
4. Select SUB CONTRAST in EVR adjustment mode and adjust so that the level A is 2.8 +/- 0.1Vp-p.
5. Select SUB BRIGHT in EVR adjustment mode and reset to the original value.

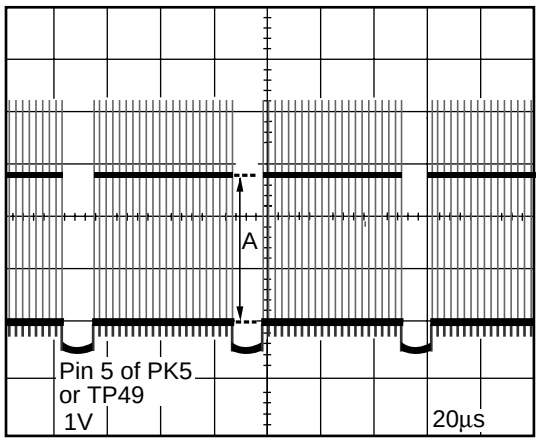


Fig. E6

FOCUS, SCREEN, CUT OFF, DRIVE ADJUSTMENT

Purpose:
To set the optimum Focus and Screen.

Symptom of Misadjustment:
The picture is out of Focus and there will be an improper screen color mix.

Test Point : TP50 (CRT C.B.A.)
Adjustment : FOCUS CONTROL (Flyback Transformer),
SCREEN CONTROL (Flyback Transformer),
SUB BRIGHT (EVR),
B DRIVE (EVR),
R DRIVE (EVR),
B CUT -OFF (EVR),
G CUT -OFF (EVR),
R CUT -OFF (EVR)
Specification: Refer to descriptions below.
Input : Video Input Jack
Monoscope Pattern Signal
Mode : STOP
Equipment : Oscilloscope, NTSC Video Pattern Generator

1. Supply a Monoscope Pattern Signal to the Video Input Jack.
2. Connect the Oscilloscope to TP50 on the CRT C.B.A. (Use TP47E for GND.)
3. Select SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.
4. Adjust the FOCUS CONTROL on the Flyback Transformer so that the center of picture is the sharpest.
5. Press DISPLAY key (Service Switch) on the remote control for collapse scan. (Refer to How to Enter Service Mode.)
6. Turn the SCREEN CONTROL on the Flyback Transformer fully counterclockwise.
7. Adjust SUB BRIGHT in EVR adjustment mode so that the level A is 185 +/- 5VDC.

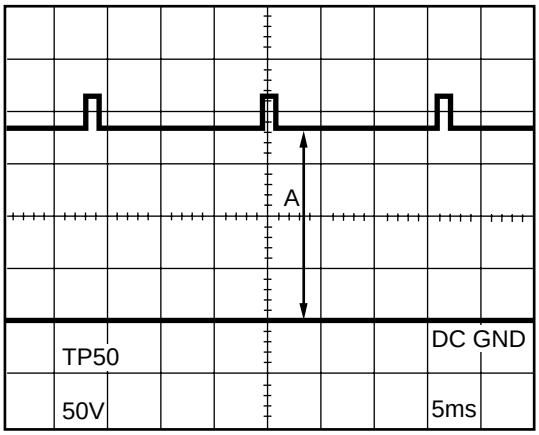


Fig. E7

8. Turn the SCREEN CONTROL on the Flyback Transformer clockwise carefully and stop at the point where any color is first observed.
9. In EVR adjustment mode, select the two colors not observed in step 8 from the following control functions (B CUT -OFF, G CUT -OFF, or R CUT -OFF) and adjust so that the horizontal line becomes white.
For example, if the horizontal line appeared red in step 8, select and adjust the B CUT -OFF and G CUT -OFF.

10. Press DISPLAY key on the remote control again to return for full frame scan.
11. Select SUB BRIGHT in EVR adjustment mode and adjust so that the picture has adequate brightness.
12. Select G DRIVE and B DRIVE in EVR adjustment mode and adjust so that the entire screen is white.

Note:
Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value.

SUB COLOR/SUB TINT ADJUSTMENT

Purpose :
To set the standard color phase.

Symptom of Misadjustment :
Color phase will be shifted.

Test Point : Pin 5 of PK5 (TV Main C.B.A.) or TP49 (CRT C.B.A.)
Adjustment : SUB COLOR (EVR), SUB TINT (EVR)
Specification: C = 1.50 +/- 0.15Vp-p
Input : Video Input Jack
Rainbow Color Bar
Mode : STOP
Equipment : Oscilloscope, NTSC Video Pattern Generator

1. Supply the Rainbow Color Bar signal to Video Input Jack.
2. Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the minimum (C0).
3. Connect the Oscilloscope to Pin 5 of PK5 on the TV Main C.B.A. or TP49 on the CRT C.B.A.
4. Select SUB TINT in EVR adjustment mode and adjust so that level A and B should be equal in amplitude.

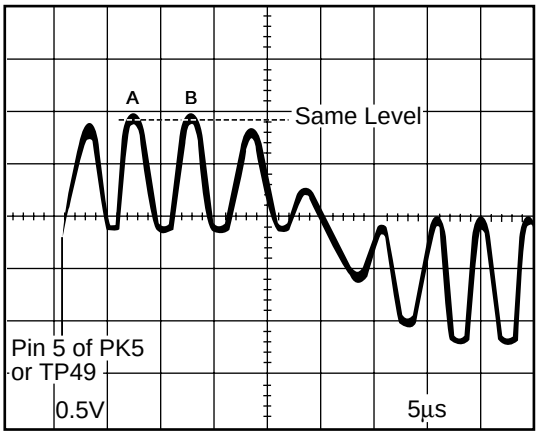


Fig. E8-1

5. Select SUB COLOR in EVR adjustment mode and adjust so that the level C is 1.50 +/- 0.15Vp-p.

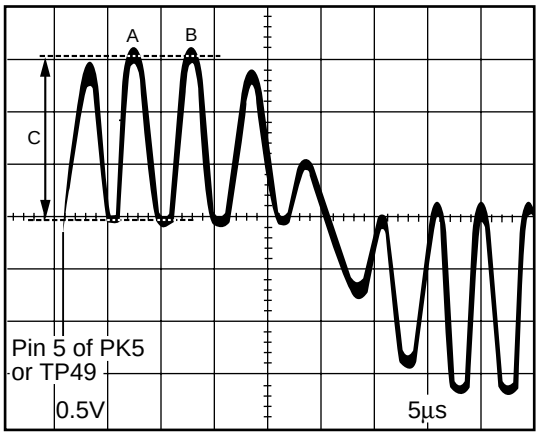


Fig. E8-2

6. Select SUB BRIGHT in EVR adjustment mode and reset to the original value.

V. HEIGHT/H. POSITION ADJUSTMENT

Purpose :
To set the standard vertical and horizontal picture size.

Symptom of Misadjustment :
The picture size is on the vertical and horizontal axis is abnormal.

Test Point : ----------
Adjustment : V SIZE (EVR),
H CENTER (EVR)
Specification: Refer to descriptions below.
Input : Video Input Jack
Monoscope Pattern Signal
Mode : STOP
Equipment : NTSC Video Pattern Generator

1. Supply a Monoscope Pattern Signal to the Video Input Jack.
2. Select V SIZE in EVR adjustment mode and adjust so that the top 4th line is just in view.
3. Confirm that the bottom 3rd line is in view and that the bottom 4th line is out of view.
   If the lines are not positioned correctly, readjust V SIZE so that the 11th line is just in view.
4. Select H CENTER in EVR adjustment mode and adjust so that A is approximately equal to width B.

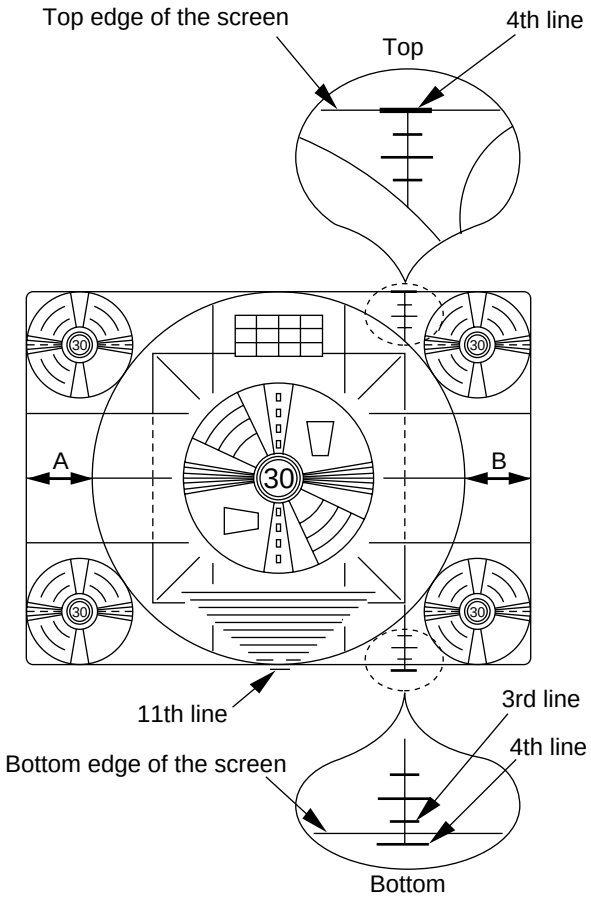


Fig. E9

WHITE BALANCE ADJUSTMENT

Purpose:
To set the standard white level for each color temperature.

Symptom of Misadjustment :
White becomes bluish or reddish.

Test Point : TP50 (CRT C.B.A)
Adjustment : FOCUS CONTROL (Flyback Transformer),
SCREEN CONTROL (Flyback Transformer),
SUB BRIGHT (EVR)
G DRIVE (EVR),
B DRIVE (EVR),
R CUT -OFF (EVR),
G CUT -OFF (EVR),
B CUT -OFF (EVR),
Specification: Refer to descriptions below.
Input : Video Input Jack
Monoscope Pattern Signal,
White Pattern Signal
Mode : STOP
Equipment : NTSC Video Pattern Generator,
White Pattern Generator, Oscilloscope,

1. Supply a Monoscope Pattern Signal to the Video Input Jack.
2. Connect the Oscilloscope to TP50 on the CRT C.B.A. (Use TP47E for GND.)
3. Select SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.
4. Adjust the FOCUS CONTROL on the Flyback Transformer so that the center of picture is the sharpest.
5. Press DISPLAY key (Service Switch) on the remote control for collapse scan. (Refer to How to Enter Service Mode.)
6. Turn the SCREEN CONTROL on Flyback Transformer fully counterclockwise.
7. Adjust SUB BRIGHT in EVR adjustment mode so that the level A is 185 +/- 5VDC.

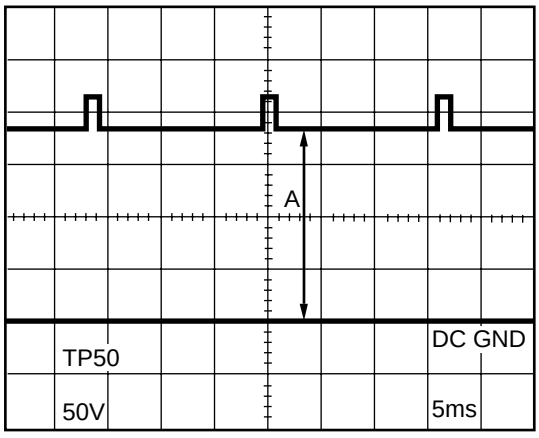


Fig. E10

8. Turn the SCREEN CONTROL on the Flyback Transformer clockwise carefully and stop at the point where any color is first observed.
9. In EVR adjustment mode, select the two colors not observed in step 8 from the following control functions (B CUT -OFF, G CUT -OFF, or R CUT -OFF) and adjust so that the horizontal line becomes white.
   For example, if the horizontal line appeared red in step 8, select and adjust the B CUT -OFF and G CUT -OFF.

10. Supply a White Pattern Signal to the Video Input Jack.
11. Press DISPLAY key on the remote control again to return for full frame scan.
12. Select G DRIVE and B DRIVE in EVR adjustment mode and adjust so that the entire screen is white.
13. Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the minimum (C0) and while turning SUB BRIGHT value from minimum (C0) up to maximum (3F), confirm that the screen is tracking the White Pattern properly.
    Repeat the above steps 5, 9, 11, and 12 until the screen is properly tracking the White Pattern.

Note:
Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value.

SUB BRIGHTNESS ADJUSTMENT

Purpose :
To set the optimum brightness level.

Symptom of Misadjustment :
The picture is too white or too black.

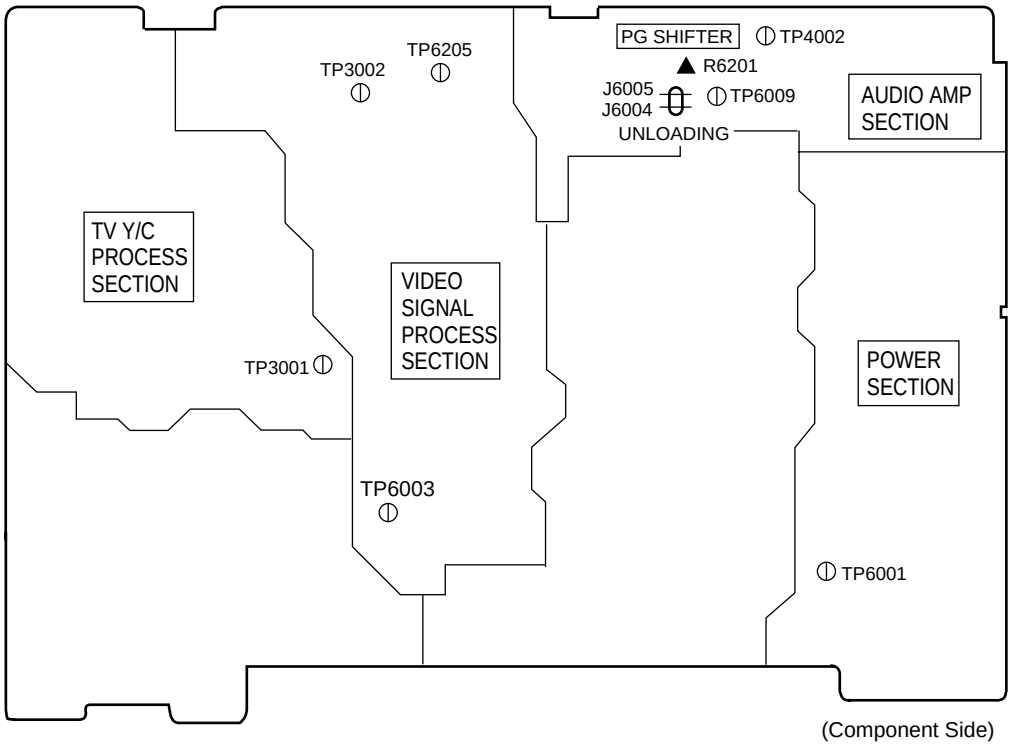
Note:
Perform this adjustment in a darkened room.

Test Point : ----------
Adjustment : SUB BRIGHT (EVR)
Specification: Refer to descriptions below.
Input : **----------**
Mode : STOP

1. Do not input any signal to the unit.
2. Set INPUT SELECT item to LINE in SET UP TV menu to display black screen.
3. Select SUB BRIGHT in EVR adjustment mode, and adjust so that the black screen starts to turn grey (lighting only).

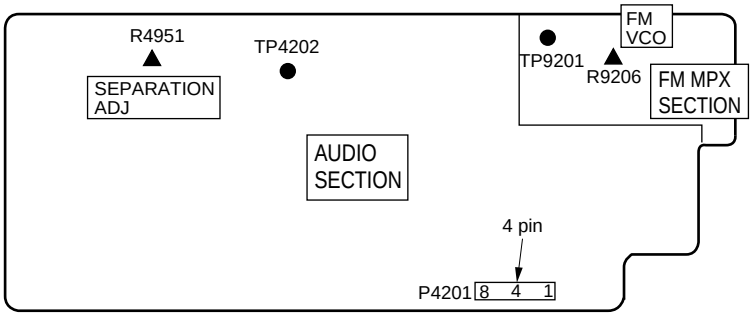
TEST POINTS AND CONTROL LOCATION

Main C.B.A.



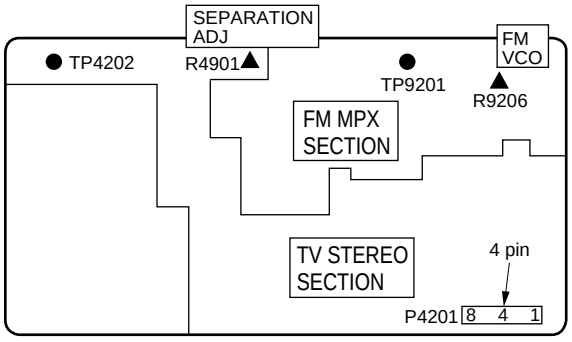
(Component Side)

Hi-Fi Audio C.B.A. (Model: B, C)



(Foil Side)

TV Stereo C.B.A. (Model: A)



(Foil Side)

Function of important Test Points on Main C.B.A.	
TP3001	Video signal
TP3002	REC/PB video envelope signal
TP4002	Normal Audio signal
TP6001	Service Test Point (inhibit sensors)
TP6003	defeat auto tracking function (connect to +5V(TP6009))
TP6009	+5V
TP6205	Head SW.

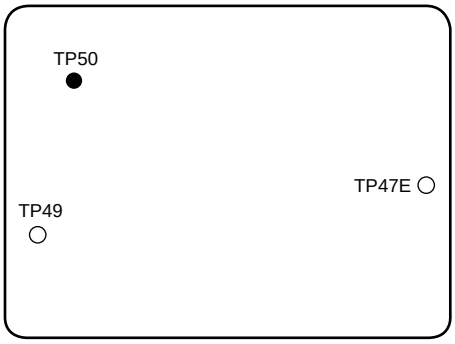
Test Point Information

● Test Point with a Test Pin.

⦶ Test Point with a jumper wire across a hole in the P.C.B.

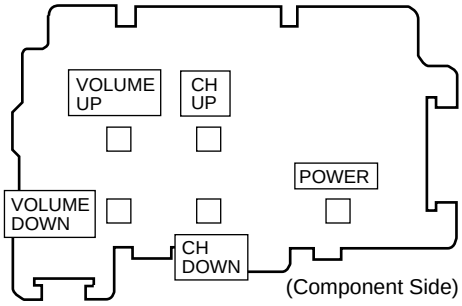
○ Test Point with no Test Pin.

CRT C.B.A.



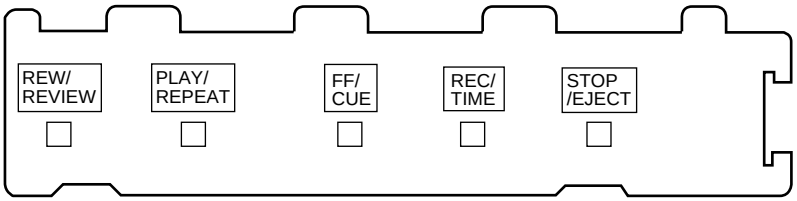
(Foil Side)

Operation I C.B.A.



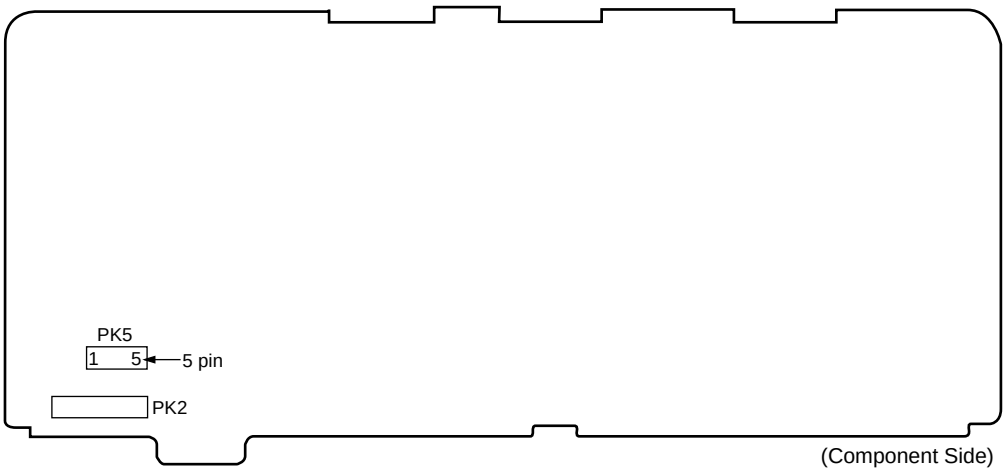
(Component Side)

Operation II C.B.A.



(Component Side)

TV Main C.B.A.



(Component Side)

SCHEMATIC DIAGRAMS

SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES

Important safety notice

Components identified by the sign ⚠ have special characteristics important for safety . When replacing any of these components. Use only the specified parts.

Replacement parts

1. Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since this drawing was prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.
3. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.

Test point information

Ⓘ :Test point with a jumper wire across a hole in P.C.B.
:Test point with a component lead on the foil side.
:Test point with no test pin.
:Test point with a test pin.

How to read Schematic and C.B.A. Diagrams

1. The Mark "■ " indicates leaded component.

Example: ■ R1002

2. Voltage Measurement

a. Color bar signal in SP mode.
b. ---:Unmeasurable or not necessary to measure.

3. Indication for Zener Voltage of Zener Diodes

The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

Example:
(6.2V).....Zener Voltage

4. How to identify Connectors on Schematic Diagrams

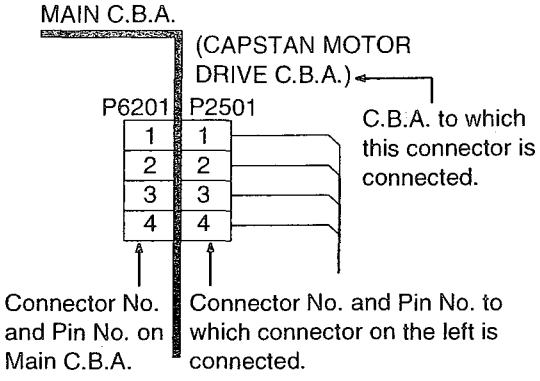
Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to, in other words, its counter part.

Connections between large P.C.B.s and small circuit boards are illustrated on the large P.C.B. Schematics.

Use the interconnection schematic diagram to find the connection between associated connectors.

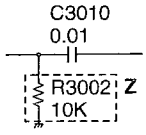
Example:

The connections between C.B.A.s are as shown below.


MAIN C.B.A.
(CAPSTAN MOTOR DRIVE C.B.A.)
P6201
P2501
1 1
2 2
3 3
4 4
C.B.A. to which this connector is connected.
Connector No. and Pin No. on Main C.B.A.
Connector No. and Pin No. to which connector on the left is connected.

5. Parts enclosed in dashed lines marked "Z" are not used in any models included in this service manual.

Example:



6. Circuit Board Layout Note

Circuit Board Layout shows components installed for various models. For proper parts content for the model you are servicing, please refer to the schematic diagram and parts list.

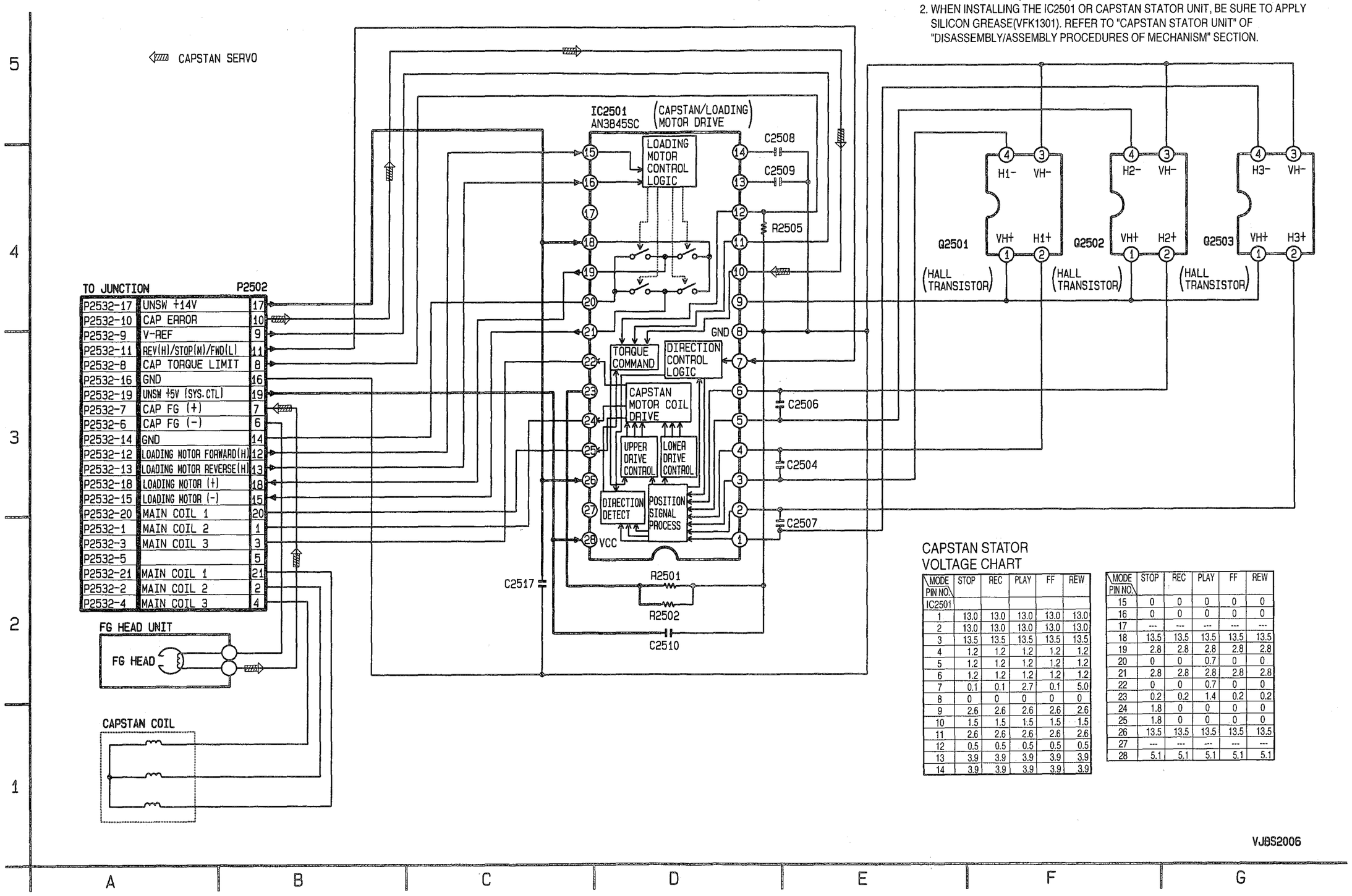
Comparison chart of models & marks used in Schematic and C.B.A. Diagrams

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not used	Z

Note : Refer to item 5 for mark "Z".

CAPSTAN STATOR SCHEMATIC DIAGRAM

NOTE:
1. CAPSTAN STATOR UNIT IS SUPPLIED AS A CAPSTAN STATOR KIT ONLY. HOWEVER, IC2501(AN3845SC) IS AVAILABLE SEPARATELY AS A REPLACEMENT PART.
2. WHEN INSTALLING THE IC2501 OR CAPSTAN STATOR UNIT, BE SURE TO APPLY SILICON GREASE(VFK1301). REFER TO "CAPSTAN STATOR UNIT" OF "DISASSEMBLY/ASSEMBLY PROCEDURES OF MECHANISM" SECTION.



CAPSTAN STATOR VOLTAGE CHART

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
IC2501					
1	13.0	13.0	13.0	13.0	13.0
2	13.0	13.0	13.0	13.0	13.0
3	13.5	13.5	13.5	13.5	13.5
4	1.2	1.2	1.2	1.2	1.2
5	1.2	1.2	1.2	1.2	1.2
6	1.2	1.2	1.2	1.2	1.2
7	0.1	0.1	2.7	0.1	5.0
8	0	0	0	0	0
9	2.6	2.6	2.6	2.6	2.6
10	1.5	1.5	1.5	1.5	1.5
11	2.6	2.6	2.6	2.6	2.6
12	0.5	0.5	0.5	0.5	0.5
13	3.9	3.9	3.9	3.9	3.9
14	3.9	3.9	3.9	3.9	3.9

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
15	0	0	0	0	0
16	0	0	0	0	0
17	---	---	---	---	---
18	13.5	13.5	13.5	13.5	13.5
19	2.8	2.8	2.8	2.8	2.8
20	0	0	0.7	0	0
21	2.8	2.8	2.8	2.8	2.8
22	0	0	0.7	0	0
23	0.2	0.2	1.4	0.2	0.2
24	1.8	0	0	0	0
25	1.8	0	0	0	0
26	13.5	13.5	13.5	13.5	13.5
27	---	---	---	---	---
28	5.1	5.1	5.1	5.1	5.1

VJBS2006

STEREO AMP SCHEMATIC DIAGRAM

REC AUDIO SIGNAL PB AUDIO SIGNAL

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠
SPECIAL CHARACTERISTICS IMPORTANT FO
WHEN REPLACING ANY OF THESE COMPONI
USE ONLY THE SPECIFIED PARTS.

IC4601 AN5265 (AUDIO AMP)
DC VOLTAGE CONTROL
OUTPUT AMP
VCC1 GND VCC2
R4605 220
C4602 47/16V
C4603 10/16V
C4604 4.7/50V
C4605 4.7/50V
R4606 560
C4622 2200P Z
R4607 4700 B, C
R4610 5600
R4608 82K
C4607 0.01 A / 0.047 B, C
R4614 10K A / 15K B, C
R4613 10K
C4608 10/16V
C4624 0.047
R4609 680 A / 390 B, C
R4628 470 A / 680 B, C
C4609 100/16V
C4610 0.047
R4615 10
R4626 330
R4617 4.7 1W
C4606 470/25V Z
TP4604

P4603 TO TV MAIN

1	DC +17V	PK10-1
2	GND	PK10-2
3	GND	PK10-3

Q4603 2SD2159(T) (SWITCHING POWER ON-ON) Z
R4632 100
C4626 470/25V
J4601
J4606
R4621 4.7 1W Z

IC4602 AN5265 (AUDIO AMP)
D4602 MA4120-M (12V)
R4616 220
C4611 47/16V
DC VOLTAGE CONTROL
OUTPUT AMP
VCC1 GND VCC2
C4613 4.7/50V
R4618 82K
C4614 0.01 A / 0.047 B, C
R4623 10K A / 15K B, C
C4615 10/16V
R4619 10K
C4625 0.047
R4620 680 A / 390 B, C
R4629 470 A / 680 B, C
C4617 100/16V
TP4605
R4624 10
C4618 0.047
C4616 1000/25V

R4630 5600
R4631 3900
D4603 MA4056-M (5.6V) A

TO TV STEREO A
TO Hi-Fi AUDIO B, C

P4601

P4301-7	TV VOLUME CONTROL	7
P4301-6	DC +17V	6
P4301-5	AUDIO AMP MUTE (H)	5
P4301-4	AUDIO R CH	4
P4301-3	GND	3
P4301-2	-UDIO L CH	2
P4301-1	GND	1

TP4602
Q4601 2SC945A(TP) (AUDIO MUTE)
R4601 10K B, C
D4605 MA165
R4602 1K
TP4603
R4603 1K
D4604 MA165
Q4602 2SC945A(TP) (AUDIO MUTE)
R4625 10K B, C
R4611 560
C4612 10/16V
C4623 2200P Z
TP4601
C4601 22/16V
R4604 68K

P4605 TO SPEAKER

2	AUDIO R CH	JUMPER
1	GND	JUMPER

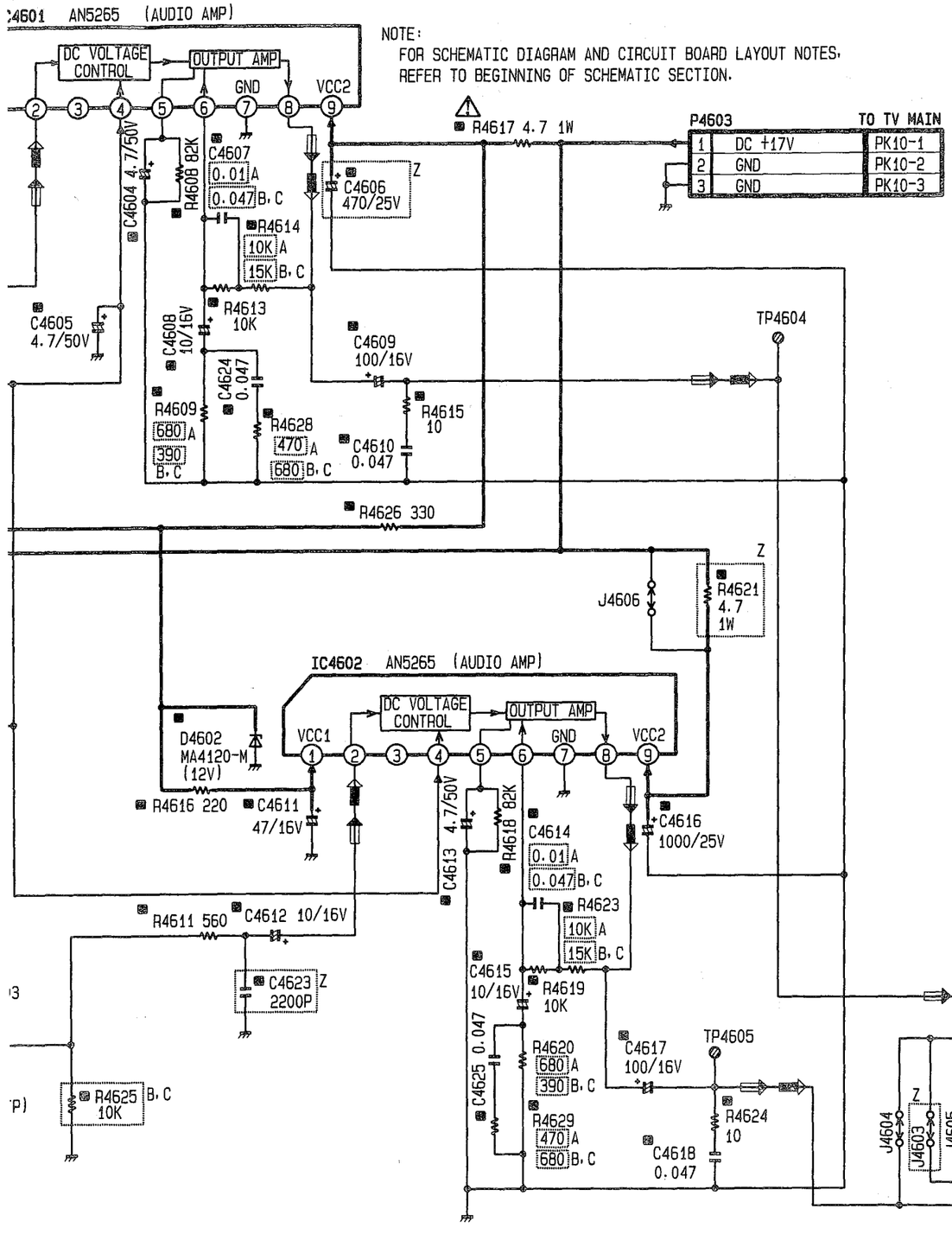
P4602 TO AUDIO/VIDEO JACK

5	AUDIO R CH	P4551-5
4	AUDIO R CH	P4551-4
3	AUDIO L CH	P4551-3
2	AUDIO L CH	P4551-2
1	GND	P4551-1

P4604 TO SPEAKER

2	AUDIO L CH	JUMPER
1	GND	JUMPER

J4604 J4603 J4605 J4602 Z



NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

STEREO AMP VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC4601		
1	9.8	9.8
2	2.6	2.6
3	---	---
4	2.5	2.5
5	6.8	6.8
6	6.9	6.9
7	0	0
8	7.1	7.1
9	16.0	16.0
IC4602		
1	9.8	9.8
2	2.6	2.6
3	---	---
4	2.5	2.5
5	6.8	6.8
6	6.9	6.9
7	0	0
8	7.1	7.1
9	16.0	16.0
Q4601		
E	0	0
C	0	0
B	0	0
Q4602		
E	0	0
C	0	0
B	0	0
Q4603		
E	16.0	16.0
C	16.5	16.5
B	16.5	16.5
TP4601	0	0
TP4602	0	0
TP4603	0	0
TP4604	6.2	6.2
TP4605	6.2	6.2

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/4W.

VJBS4014

D E F G H I J

MAIN I (POWER SUPPLY/SYSTEM CONTROL/SERVO) / JUNCTION SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LA
REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY
WHEN REPLACING ANY OF THESE COMPONENTS.
USE ONLY THE SPECIFIED PARTS.

CAPSTAN SERVO
CYLINDER SERVO

TO MAIN IV
1 UNSW +14V
2 POWER DOWN (L)
3 UNSW +37V
4 UNSW +5V (SYS.CTL)
74 UNSW -30V
76 UNSW +5V (VIDEO)

TO TV MAIN — P1201

PK3-1	GND	1
PK3-2	GND	2
PK3-3	GND	3
PK3-4		4
PK3-5		5
PK3-6	GND	6
PK3-7	GND	7

TO MAIN II
71 UNSW -30V
75 UNSW +5V (SYS.CTL)
7 DELAY REC +12V
8 SW +12V

TO MAIN III
6 SW +12V
9 TV POWER ON (H)

TO MAIN II
10 V-LOCK PULSE
11 UNSW +14V

PR1050 UN10015 /ICP-F38-1 /VSFS0029D25
PR1054 UN11010 /ICP-F25-1
TP1053
TP1052
TP1051
TP1055
TP105B
Q1051 2SC3852 (+12V REGULATOR)
R1052 15K 1/4W
R1053 15K 1/4W
C1052 10/16V
D1055 Z
D1051 MA4100N (10V)
D1052
D1053
C1051 0.47/50V
Q1052 2SC945A(TP) (+12V REGULATOR)
R1051 4700
R1057 1800 1/4W
D1054 HZ30-3TD(30V)
P6011
P6012
TO OPERATION I
P6301

P6012	P6011	P6301	P6302
UNSW -30V	UNSW +5V(SYS.CTL)	ON-TIMER LED ON(L)	P6302-1
UNSW +5V(VIDEO)	REC LED ON(L)	REPEAT LED ON(L)	P6302-2
TIMER LED ON(L)	REPEAT LED ON(L)	TIMER LED ON(L)	P6302-3
REC LED ON(L)	ON-TIMER LED ON(L)	REC LED ON(L)	P6302-4
		UNSW +5V(SYS.CTL)	P6302-5
		GND	P6302-6
		IR DATA	P6302-7
		KEY DATA 3	P6302-8
		KEY DATA 2	P6302-9
		KEY DATA 1	P6302-10
		KEY DATA 0	P6302-11
			P6302-12

Q6003 (SWITCHING REC-ON)
R6005 10K
Q6002 (SWITCHING DELAY REC ON-ON)
R6004 3300
R6001 560 1/4W
R6116 560 1/4W
SENSOR LED
D6001 VEK55521
TP6016
C6002 1000P
Q6001 (SENSOR LED DRIVE)
IC6004 24LC01B/PS1 (MEMORY)
VDD WRITE PROTECT SERIAL CLOCK SERIAL DATA GND
R6121 220 1/4W
R6120 220 1/4W
C6006 0.1
WF34
TP6205
C6229 100P
C6012 0.1
C6007 100P
C6011 100P
C6010 100P
C6009 100P
C6008 100P
R6014 56K
R6013 56K
R6012 4700
R6011 4700
R6119 10K
R6019 3300
D6002
R6006 390
Q6004 (SWITCHING POWER ON-ON)
R6010 56 1/4W
C6001 470/6.3V
Q6006 UN211L (IC6001 RESET)
C6005 100/6.3V
R6008 1800
R6007 4.7M
R6009 1K
Q6007 (IC6001 RESET)
(SWITCHING POWER ON-ON) Q6005
R6002 10K
R6003 10K
C6201 47/6.3V
R6206 33K
C6204 0.01
R6214 390K
D6204
C6202 33/6.3V
R6207 22K
C6205 1000P
R6215 150K
C6206 0.01
R6218 A 180K B,C 150K
R6219 270K
R6222 150K
R6220 1K
R6221 220
C6036 0.1
TP6208
TP6201
TP6202
R6208 82K
R6209 A 220K B,C 180K
C6203 0.01
R6031 2700
R6032 2700
R6033 1K
WF43
WF41
WF42
R6029 100
R6028 1K
R6027 100
R6026 100
R6025 1K
R6115 10K
R6024 10K
R6023 10K
R6022 1K
R6021 1K
R6020 1K
R6018 4700
R6017 1K
R6016 1K
R6015 10K
R6106 10K
R6105 10K
R6075 220K 1/4W
R6076 15K 1/4W
R6077 15K
R6074 22K

26	PWM0(CYL SC)	PWM1(CYL PC)	N-DATA
27	P17	PWM2(CAP SC)	OSD_DATA_IN
28	P16 S-LED_H	PWM3(CAP PC)	SCK
29	P15 TV_POWER_ON_H	V-LOCKPLS	IIC_DATA_OUT
		HSW	IIC_DATA_IN
		SXI	NA
		RST	TUNER_L
		SB00	HIFI_PLAY_H
		SB10	LO-F_H
		SB10	LO-R_H
		P05	OSD_CS_L
		P06	C/R/SS_L
		P07	PLAY_L
		P50	A-MUTE_H
		P51	PLL_CE_H
		P52	FM_MODE_L
		P53	FM_STEREO_L
		P54	
		P55	
		P56	
		P57	
		P60	
		P61	
		P62	
		P63	
		P64	
		P65	ENVD
		P66	HAMP
		P67	ROT

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

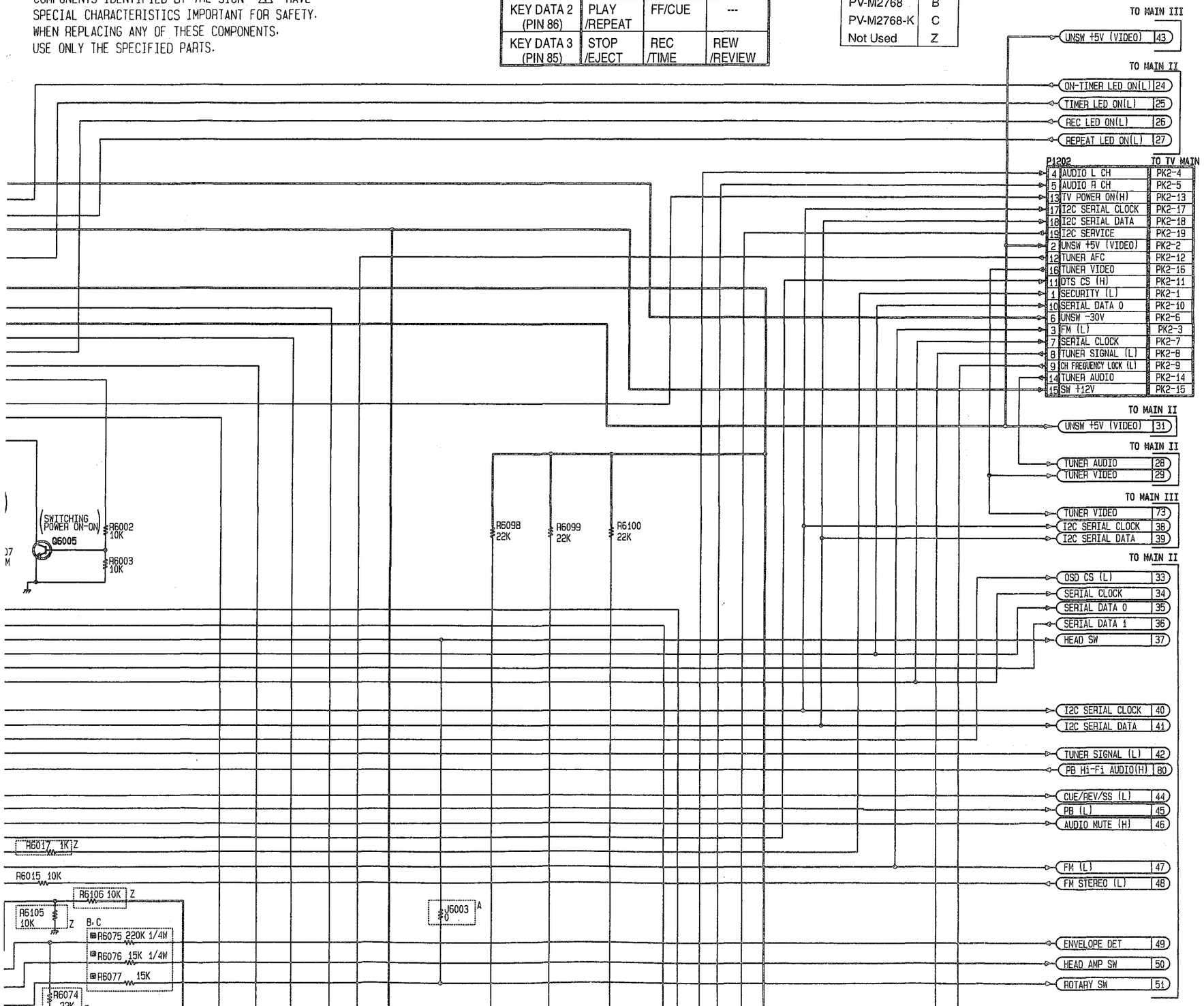
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

IC6001 KEY MATRIX

TERMINAL VOLTAGE	0~0.9V	1.0~2.5V	2.6~4.1V
KEY DATA 0 (PIN 88)	CH DOWN	VOLUME DOWN	POWER
KEY DATA 1 (PIN 87)	CH UP	VOLUME UP	---
KEY DATA 2 (PIN 86)	PLAY /REPEAT	FF/CUE	---
KEY DATA 3 (PIN 85)	STOP /EJECT	REC /TIME	REW /REVIEW

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z



I/O CHART FOR IC6001(MN675058A4N)

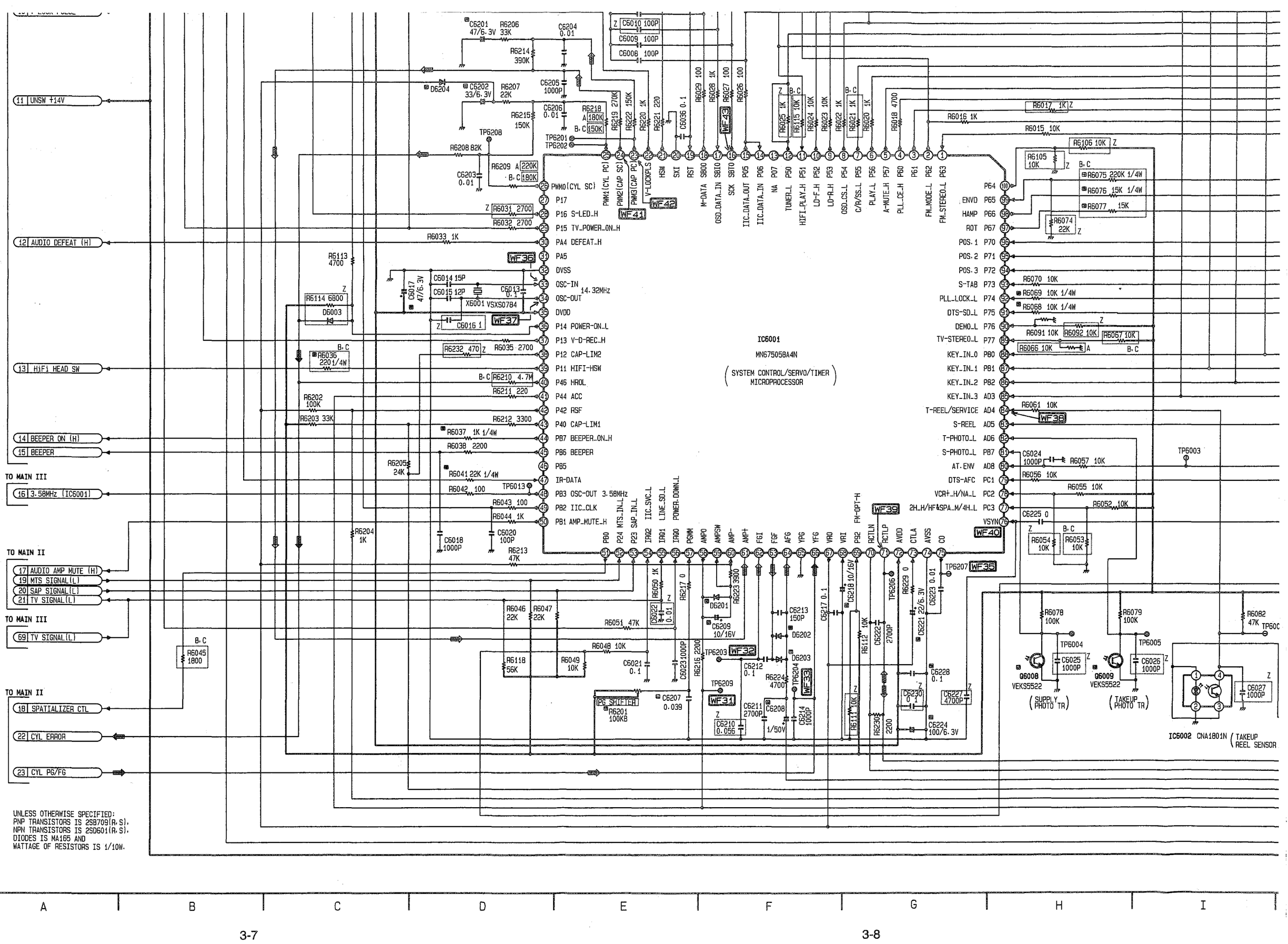
PIN NO.	I/O	FUNCTION
1	I	FM STEREO SIGNAL (L)
2	O	FM MODE (L)
3	---	(Not used)
4	O	DTS-CS (H)
5	O	AUDIO MUTE (H)
6	O	PB (L)
7	O	CUE/REV/SS (L)
8	O	OSD-CS (L)
9	O	LOADING MOTOR REVERSE (H)
10	O	LOADING MOTOR FORWARD (H)
11	I	PB Hi-Fi AUDIO (H)
12	O	TUNER SIGNAL (L)
13	---	(Not used)
14	I	I²C SERIAL DATA
15	O	I²C SERIAL DATA
16	O	SERIAL CLOCK
17	I	SERIAL DATA 1
18	O	SERIAL DATA O
19	I	RESET
20	---	GND
21	O	HEAD SW
22	O	V-LOCK PULSE
23	O	CAP PHASE ERROR
24	O	CAP SPEED ERROR
25	O	CYLINDER PHASE ERROR
26	O	CYLINDER SPEED ERROR
27	O	(Not used)
28	O	SENSOR LED ON (H)
29	O	TV POWER ON (H)
30	O	AUDIO DEFEAT (H)
31	O	(Not used)
32	---	GND
33	I	OSC 1
34	O	OSC 2
35	---	VDD
36	O	+12V POWER ON (H)
37	O	VIDEO DELAY REC (H)
38	O	CAP TORQUE LIMIT 2
39	O	Hi-Fi HEAD SW
40	O	H ROLL ACCELERATION
41	O	FORCED ACCELERATION
42	O	CAP REV(H)/STOP(M)/FWD(L)
43	O	CAP TORQUE LIMIT 1
44	O	BEEPER ON (H)
45	O	BEEPER
46	O	(Not used)
47	I	IR DATA
48	O	3.58MHz
49	O	I²C SERIAL CLOCK
50	O	AUDIO AMP MUTE (H)
51	O	SPATIALIZER CONTROL (H/L/OFF)

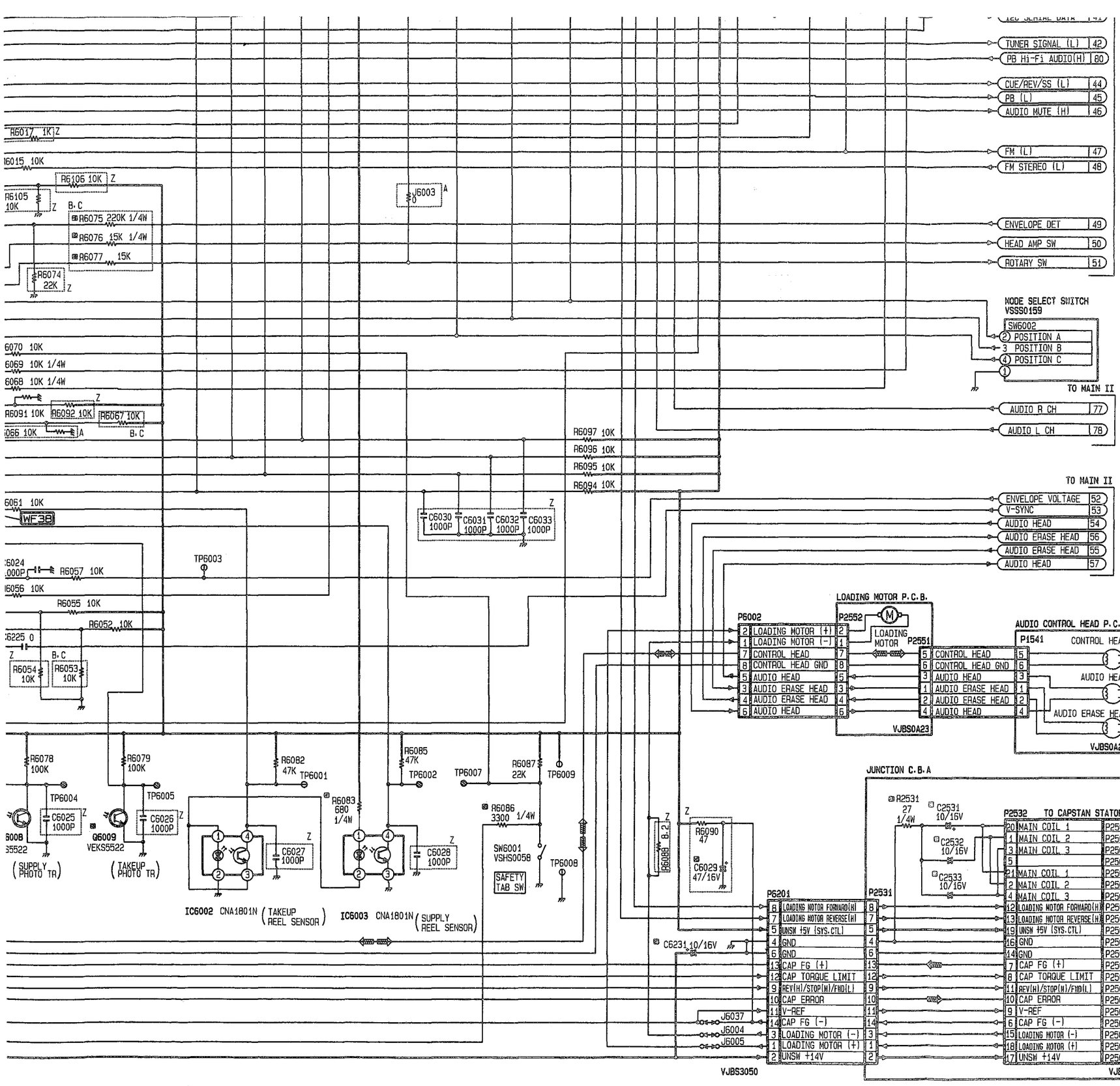
PIN NO.	I/O	FUNCTION
52	I	MTS SIGNAL (L)
53	I	SAP SIGNAL (L)
54	I	I²C SERVICE (L)
55	I	TV SIGNAL (L)
56	I	POWER DOWN (L)
57	I	PG SHIFTER
58	O	AMP
59	I	AMP SW
60	I	AMP -
61	I	AMP +
62	I	CAP FG
63	O	CAP FG
64	I	CAP FG
65	---	GND
66	I	CYL PG/FG
67	O	V-REF 1
68	I	V-REF 2
69	I	FM (L)
70	O	CONTROL PULSE (-)
71	O	CONTROL PULSE (+)
72	---	VDD
73	I	CTL AMP
74	---	GND
75	O	PB CTL PULSE
76	I	V-SYNC
77	I	2 HEAD (H)/Hi-Fi (M)/4 HEAD (L)
78	I	VCR PLUS (H)/GUIDE PLUS AND STARSITE (M)/NORMAL (L)
79	I	AFC
80	I	ENVELOPE VOLTAGE
81	I	SUPPLY PHOTO TR (L)
82	I	TAKEUP PHOTO TR (L)
83	I	SUPPLY REEL PULSE
84	I	TAKEUP REEL PULSE/SERVICE (L)
85	I	KEY DATA 3
86	I	KEY DATA 2
87	I	KEY DATA 1
88	I	KEY DATA O
89	I	TV STEREO (L)
90	I	DEMO (L)
91	I	TUNER SIGNAL (L)
92	I	CH FREQUENCY LOCK (L)
93	I	SAFETY TAB BROKEN (H)
94	I	MODE SW POSITION C
95	I	MODE SW POSITION B
96	I	MODE SW POSITION A
97	O	ROTARY SW
98	O	HEAD AMP SW
99	I	ENVELOPE DET
100	---	(Not used)

MAIN I VOLTAGE CHART

MODE / PIN NO	STOP	REC	PLAY	FF	REW
IC6001					
1	5.1	5.1	5.1	5.1	5.1
2	5.1	5.1	5.1	5.1	5.1
3	---	---	---	---	---
4	0.3	0.3	0.3	0.3	0.3
5	0.2	0.2	0.2	0.2	0.2
6	5.1	5.1	0.1	5.1	5.1
7	5.1	5.1	5.1	5.1	5.1
8	4.1	4.1	4.1	4.1	4.1
9	0	0	0	0	0
10	0	0	0	0	0
11	5.1	5.1	5.1	5.1	5.1
12	5.1	5.1	5.1	5.1	5.1
13	---	---	---	---	---
14	3.9	3.9	3.9	3.9	3.9
15	3.9	3.9	3.9	3.9	3.9
16	4.5	4.5	4.5	4.5	4.5
17	5.1	5.1	5.1	5.1	5.1
18	4.7	4.7	4.7	4.7	4.7
19	5.1	5.1	5.1	5.1	5.1
20	0	0	0	0	0
21	2.6	2.6	2.6	2.6	2.6
22	0.1	0.1	0.1	0.1	0.1
23	2.7	2.7	2.7	2.7	2.7
24	0	2.6	2.6	2.6	2.6
25	1.9	2.3	2.3	2.6	2.6
26	2.6	2.6	2.6	2.6	2.6
27	---	---	---	---	---
28	---	---	---	---	---
29	0	0	0	0	0
30	5.1	5.1	5.1	5.1	5.1
31	---	---	---	---	---
32	0	0	0	0	0
33	2.6	2.6	2.6	2.6	2.6
34	2.6	2.6	2.6	2.6	2.6
35	5.1	5.1	5.1	5.1	5.1
36	0	0	0	0	0

MODE / PIN NO	STOP	REC	PLAY	FF	REW
95	0.1	5.2	5.2	5.2	5.2
96	5.1	0.1	0.1	0.1	0.1
97	2.6	2.6	2.6	2.6	2.6
98	0.1	0.1	0.1	0.1	0.1
99	0.2	0.2	0.2	0.2	0.2
100	---	---	---	---	---
IC6002					
1	1.3	1.3	1.3	1.3	1.3
2	0	0	0	0	0
3	1.3	1.3	1.3	1.3	1.3
4	---	---	---	---	---
IC6003					
1	0	0	0	0	0
2	1.3	1.3	1.3	1.3	1.3
3	0	0	0	0	0
4	---	---	---	---	---
IC6004					
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	4.9	4.9	4.9	4.9	4.9
6	5.0	5.0	5.0	5.0	5.0
7	0	0	0	0	0
8	5.1	5.1	5.1	5.1	5.1
Q1051					
E	12.1	12.1	12.1	12.1	12.1
C	13.5	13.5	13.5	13.5	13.5
B	12.6	11.6	12.6	12.6	12.6
Q1052					
E	0	0	0	0	0
C	12.6	11.6	12.6	12.6	12.6
B	0.7	0.7	0.7	0.7	0.7
Q6002					
E	12.1	12.1	12.1	12.1	12.1
C	0.5	12.1	0.5	0.5	0.5


11 UNSW +14V
12 AUDIO DEFEAT (H)
13 HiFi HEAD SW
14 BEEPER ON (H)
15 BEEPER
TO MAIN III
16 3.58MHz (IC6001)
TO MAIN II
17 AUDIO AMP MUTE (H)
19 MTS SIGNAL(L)
20 SAP SIGNAL(L)
21 TV SIGNAL(L)
TO MAIN III
69 TV SIGNAL(L)
TO MAIN II
18 SPATIALIZER CTL
22 CYL ERROR
23 CYL PG/FG
IC6001
MN6750SBA4N
(SYSTEM CONTROL/SERVO/TIMER MICROPROCESSOR)
IC6002 CNA1801N (TAKEUP REEL SENSOR
UNLESS OTHERWISE SPECIFIED:
PNP TRANSISTORS IS 2SB709(R,S),
NPN TRANSISTORS IS 2SD601(R,S),
DIODES IS MA165 AND
WATTAGE OF RESISTORS IS 1/10W.
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6



14	3.3	3.3	3.3	3.3	3.3
15	3.9	3.9	3.9	3.9	3.9
16	4.5	4.5	4.5	4.5	4.5
17	5.1	5.1	5.1	5.1	5.1
18	4.7	4.7	4.7	4.7	4.7
19	5.1	5.1	5.1	5.1	5.1
20	0	0	0	0	0
21	2.6	2.6	2.6	2.6	2.6
22	0.1	0.1	0.1	0.1	0.1
23	2.7	2.7	2.7	2.7	2.7
24	0	2.6	2.6	2.6	2.6
25	1.9	2.3	2.3	2.6	2.6
26	2.6	2.6	2.6	2.6	2.6
27	---	---	---	---	---
28	---	---	---	---	---
29	0	0	0	0	0
30	5.1	5.1	5.1	5.1	5.1
31	---	---	---	---	---
32	0	0	0	0	0
33	2.6	2.6	2.6	2.6	2.6
34	2.6	2.6	2.6	2.6	2.6
35	5.1	5.1	5.1	5.1	5.1
36	0	0	0	0	0
37	0	5.1	0	0	0
38	---	---	---	---	---
39	---	---	---	---	---
40	2.2	2.2	2.2	2.2	2.2
41	1.1	2.4	2.4	2.4	2.4
42	2.6	0.1	0.1	0.1	5.0
43	5.0	5.0	5.0	5.0	5.0
44	2.6	2.6	2.6	2.6	2.6
45	2.6	2.6	2.6	2.6	2.6
46	---	---	---	---	---
47	5.0	5.0	5.0	5.0	5.0
48	2.6	2.6	2.6	2.6	2.6
49	4.1	4.1	4.1	4.1	4.1
50	0	0	0	0	0
51	---	---	---	---	---
52	5.1	5.1	5.1	5.1	5.1
53	5.1	5.1	5.1	5.1	5.1
54	5.1	5.1	5.1	5.1	5.1
55	0.8	0.8	0.8	0.8	0.8
56	5.2	5.2	5.2	5.2	5.2
57	3.0	3.0	3.0	3.0	3.0
58	2.4	2.4	2.4	2.4	2.4
59	2.6	2.6	2.6	2.6	2.6
60	2.6	2.6	2.6	2.6	2.6
61	2.6	2.6	2.6	2.6	2.6
62	2.6	2.6	2.6	2.6	2.6
63	2.6	2.6	2.6	2.6	2.6
64	2.6	2.6	2.6	2.6	2.6
65	0	0	0	0	0
66	1.2	1.2	1.2	1.2	1.2
67	2.6	2.6	2.6	2.6	2.6
68	2.6	2.6	2.6	2.6	2.6
69	5.1	5.1	5.1	5.1	5.1
70	2.6	2.6	2.6	2.6	2.6
71	2.6	2.6	2.6	2.6	2.6
72	5.1	5.1	5.1	5.1	5.1
73	2.6	2.6	2.6	2.6	2.6
74	0	0	0	0	0
75	2.6	2.6	2.6	2.6	2.6
76	0.5	0.5	0.5	0.5	0.5
77	5.1	5.1	5.1	5.1	5.1
78	5.1	5.1	5.1	5.1	5.1
79	2.6	2.6	2.6	2.6	2.6
80	3.7	3.7	5.1	3.7	3.7
81	5.1	5.1	5.1	5.1	5.1
82	5.1	5.1	5.1	5.1	5.1
83	---	---	---	---	---
84	---	---	---	---	---
85	5.1	5.1	5.1	5.1	5.1
86	5.1	5.1	5.1	5.1	5.1
87	5.1	5.1	5.1	5.1	5.1
88	5.1	5.1	5.1	5.1	5.1
89	0	0	0	0	0
90	0	0	0	0	0
91	5.1	5.1	5.1	5.1	5.1
92	0.1	0.1	0.1	0.1	0.1
93	0	0	0	0	0
94	5.2	5.2	5.2	5.2	5.2

4	---	---	---	---	---
IC6004					
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	4.9	4.9	4.9	4.9	4.9
6	5.0	5.0	5.0	5.0	5.0
7	0	0	0	0	0
8	5.1	5.1	5.1	5.1	5.1
Q1051					
E	12.1	12.1	12.1	12.1	12.1
C	13.5	13.5	13.5	13.5	13.5
B	12.6	11.6	12.6	12.6	12.6
Q1052					
E	0	0	0	0	0
C	12.6	11.6	12.6	12.6	12.6
B	0.7	0.7	0.7	0.7	0.7
Q6002					
E	12.1	12.1	12.1	12.1	12.1
C	0.5	12.1	0.5	0.5	0.5
B	12.1	11.2	12.1	12.1	12.1
Q6003					
E	0.4	1.1	0.4	0.4	0.4
C	12.1	11.2	12.1	12.1	12.1
B	0	5.0	0	0	0
Q6004					
E	5.1	5.1	5.1	5.1	5.1
C	5.1	5.1	5.1	5.1	5.1
B	4.4	4.4	4.4	4.4	4.4
Q6005					
E	0	0	0	0	0
C	0	0	0	0	0
B	0.8	0.8	0.8	0.8	0.8
Q6006					
E	5.1	5.1	5.1	5.1	5.1
C	5.1	5.1	5.1	5.1	5.1
B	0	0	0	0	0
Q6007					
E	0	0	0	0	0
C	5.0	5.0	5.0	5.0	5.0
B	0	0	0	0	0
Q6008					
E	0	0	0	0	0
C	5.1	5.1	5.1	5.1	5.1
B	---	---	---	---	---
Q6009					
E	0	0	0	0	0
C	5.1	5.1	5.1	5.1	5.1
B	---	---	---	---	---
TP1051	0	0	0	0	0
TP1052	36.5	36.5	36.5	36.5	36.5
TP1053	13.5	13.5	13.5	13.5	13.5
TP1055	5.1	5.1	5.1	5.1	5.1
TP1058	0	0	0	0	0
TP6001	---	---	---	---	---
TP6002	---	---	---	---	---
TP6003	3.4	3.4	3.0	3.4	3.4
TP6004	4.9	4.9	4.9	4.9	4.9
TP6005	5.1	5.1	5.1	5.1	5.1
TP6007	0	0	0	0	0
TP6008	0	0	0	0	0
TP6009	5.1	5.1	5.1	5.1	5.1
TP6013	2.6	2.6	2.6	2.6	2.6
TP6016	0	0	0	0	0
TP6201	2.6	2.6	2.6	2.6	2.6
TP6202	1.9	2.2	2.2	2.6	2.6
TP6203	2.6	2.6	2.6	2.6	2.6
TP6204	1.2	1.2	1.2	1.2	1.2
TP6205	2.6	2.6	2.6	2.6	2.6
TP6206	0	3.0	0	0	0
TP6207	2.6	2.6	2.6	2.6	2.6
TP6208	2.5	2.5	2.5	2.5	2.5
TP6209	1.1	2.4	2.4	2.4	2.4

H I J K L M N O P

MAIN II (SIGNAL PROCESS/OSD/AUDIO AMP) SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
CYLINDER SERVO

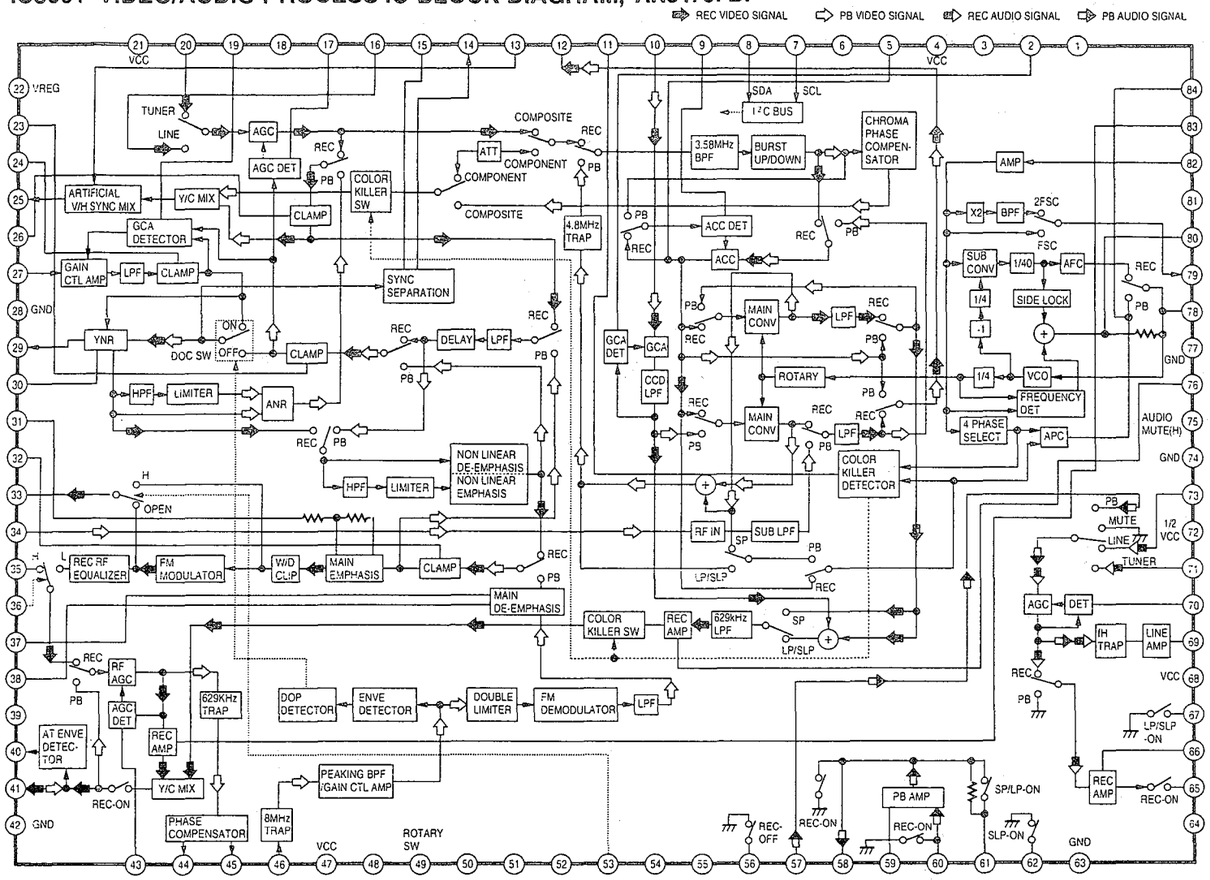
TO MAIN III
PB VIDEO
LINE VIDEO
P3002 TO AUDIO/VIDEO JACK A
P4501-1 VIDEO
P4501-2 GND
P4501-3 GND
P4501-4 AUDIO
P4501-5 SW +12V
P3002 TO AUDIO/VIDEO JACK B, C
P4901-1 VIDEO
P4901-2 GND
TO MAIN III
KILLER DET
3.58MHz(TC3001)
TO MAIN I
I2C SERIAL DATA
I2C SERIAL CLOCK
TO MAIN I
TUNER VIDEO
TUNER AUDIO
TO MAIN I
UNSW +30V
TO MAIN I
SAP SIGNAL (L)
MTS SIGNAL (L)
AUDIO DEFEAT(H)
FM STEREO (L)
A, B, C TO TV STEREO
B, C TO HI-FI AUDIO
P4201-1 AUDIO -5.6V
P4201-2 FM MONO (L)
P4201-3 FM STEREO (L)
P4201-4 TUNER AUDIO
P4201-5 AUDIO DEFEAT (H)
P4201-6 MAIN (H)/SAP (L)
P4201-7 STEREO(H)/MONO(L)
P4201-8 MTS SIGNAL (L)
A, TO TV STEREO
B, C TO HI-FI AUDIO
P4202-9 SAP SIGNAL (L)
P4202-10 GND
P4202-11 UNSW +5V (VIDEO)
P4202-12 SW +12V
TO MAIN I
AUDIO MUTE(H)
FM(L)
TUNER SIGNAL (L)
BEEPER ON(H)
AUDIO R CH
AUDIO L CH
A, TO TV STEREO
B, C TO HI-FI AUDIO
P4203-14 AUDIO R CH
P4203-15 GND
P4203-16 AUDIO L CH
P4203-17 GND
P4203-18 BASS CONTROL
P4203-19 TREBLE CONTROL
P4203-20 AUDIO MUTE (H)
P4203-21 UNSW +14V
A, TO TV STEREO
B, C TO HI-FI AUDIO
P4204-22 AUDIO AMP MUTE (H)
P4204-23 TV VOLUME CONTROL
P4204-24 TUNER SIGNAL (L)
P4204-25 FM (L)
P4204-26 NORMAL AUDIO
P4204-27 GND
P4204-28 NORMAL AUDIO
P4204-29
TO MAIN IV
POWER DOWN (L)
B, C TO HI-FI AUDIO
P4205-30 SPATIALIZER CTL
P4205-31
P4205-32 GND
P4205-33 REC AUDIO
P4205-34 GND
P4205-35
P4205-36 GND
P4205-37 PB AUDIO
P4205-38 PB HI-FI AUDIO(H)
P4205-39 HI-FI HEAD SW
TO HI-FI AUDIO
P4206-40 GND
P4206-41 I2C SERIAL DATA
P4206-42 I2C SERIAL CLOCK
SPATIALIZER CTL
PB HI-FI AUDIO (H)
HI-FI HEAD SW
TO
SERIAL CLOCK
SERIAL DATA 0
SERIAL DATA 1
TP4001
R4024 2700 1/4W
R4025 2700 1/4W
C4022 100/16V
D4022 MA4056-M (5.6V)
R4034 10K
Q4004 UN2213 (SWITCHING BEEPER ON-ON)
TP3007
C3236 0.1
C3233 0.01 Z
L3231 220
C3234 10/6.3V
IC3201 MN3885S (CCD 1H DELAY)
AMP
GND
VDD
CLOCK DRIVER
CCD 1H DELAY
TP3012
C3231 1/50V
C3235 0.01
C3237 0.01
C3232 1000P
TP3009
R3077 100
TP3010
C3009 4.7/25V
C3019 2.2/50V
C3021 2.2/50V
R3001 220 1/4W
R3005 220 1/4W
C3036 0.1
C3037 220/6.3V Z
R3002 0
R3010 3300
C3001 0.01
R3030 56K Z
R3031 56K
J3003
J3002
TP3011
IC3004 AN3476FBP (VIDEO/AUDIO PROCESS)
WF1
WF2
WF7
WF12
TP3001
WF6
WF8
WF15
C3007 100/6.3V Z
C3006 0.1
C3014 0.1 Z
C3028 22/16V
C3038 10/16V
R3011 100
R3025 1.2M
R3034 1K
R3033 0
C3026 8200P
R3026 470K
C3025 0.47
C3030 0.01
C3032 0.47
C3031 0.1
Q3001 (BUFFER)
R3038 2200
R3036 1K
R3037 1K
C3015 47/6.3V
C3027 0.01
C3057 0.1
C3056 0.22
V REG
CLAMP
CLAMP
CLAMP
TUNER
LINE
V/C MIX
REC
PB
SYNC SEPARATION
I2C CONTROL
ACC DET
ACC VCC
GCA DET
AGC DET
COLOR KILLER DET
APC LPF
3.58MHz
SIDE LOCK DET
X3001 VSXS0195-T
C3044 0.01
R3035 5600
C3045 3.3/50V
C3053 0.01 Z
C3002 3P
R3043 2200
R3044 5600
L3010 100
C3047
C3048 0.1
R3303 0
R3302 0
R3301 0
R3306 0
LED DRIVER
OUTPUT CONTROL
CHARA GENER
R3390 2200
R3312 56K
R3304 2200 1/4W
R3305 2200 1/4W
R3307 470
R3308 1K
R3309 1K

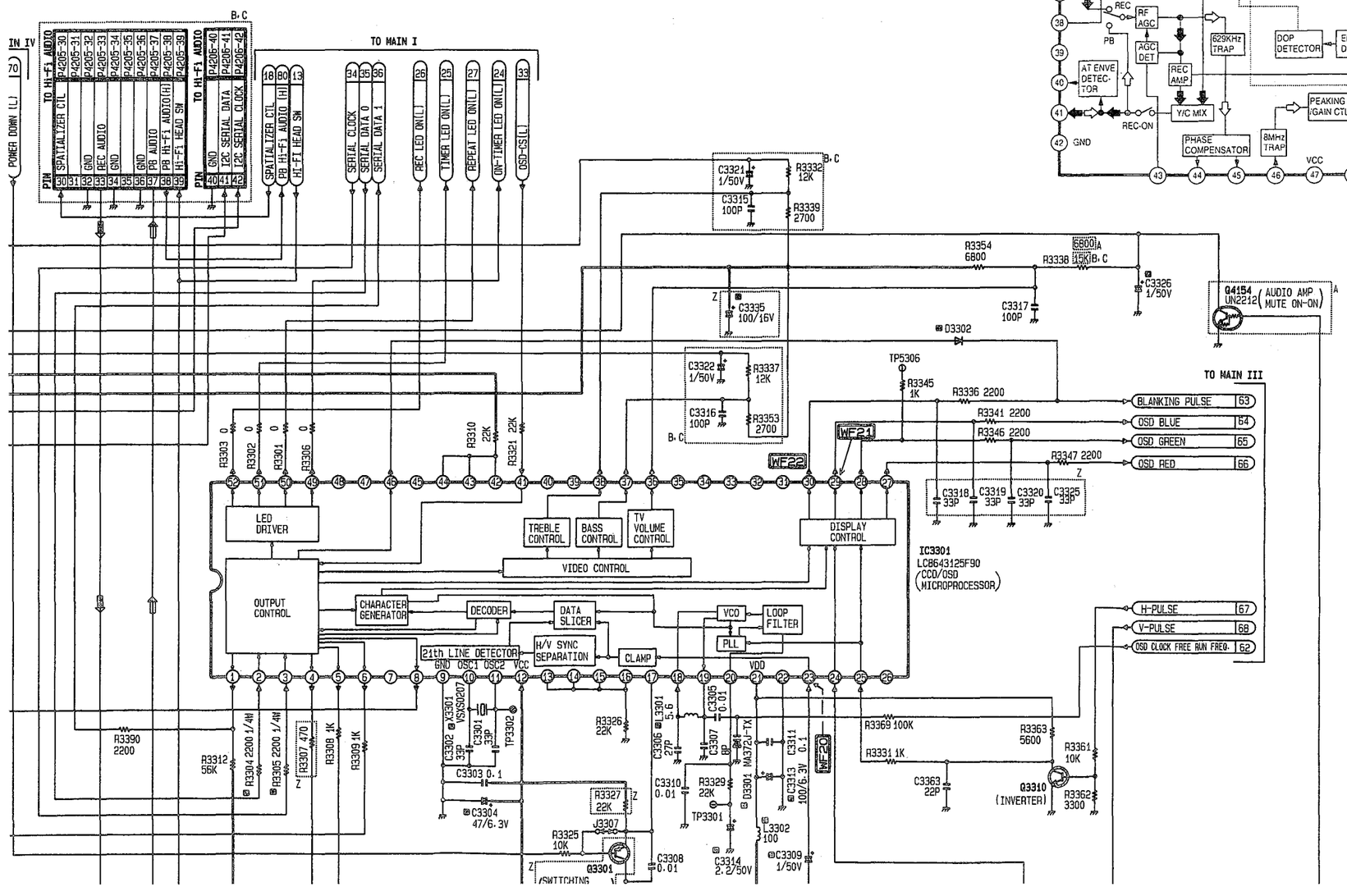
:MATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES.
) BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

IC3001 VIDEO/AUDIO PROCESS IC-BLOCK DIAGRAM, AN3476FBP



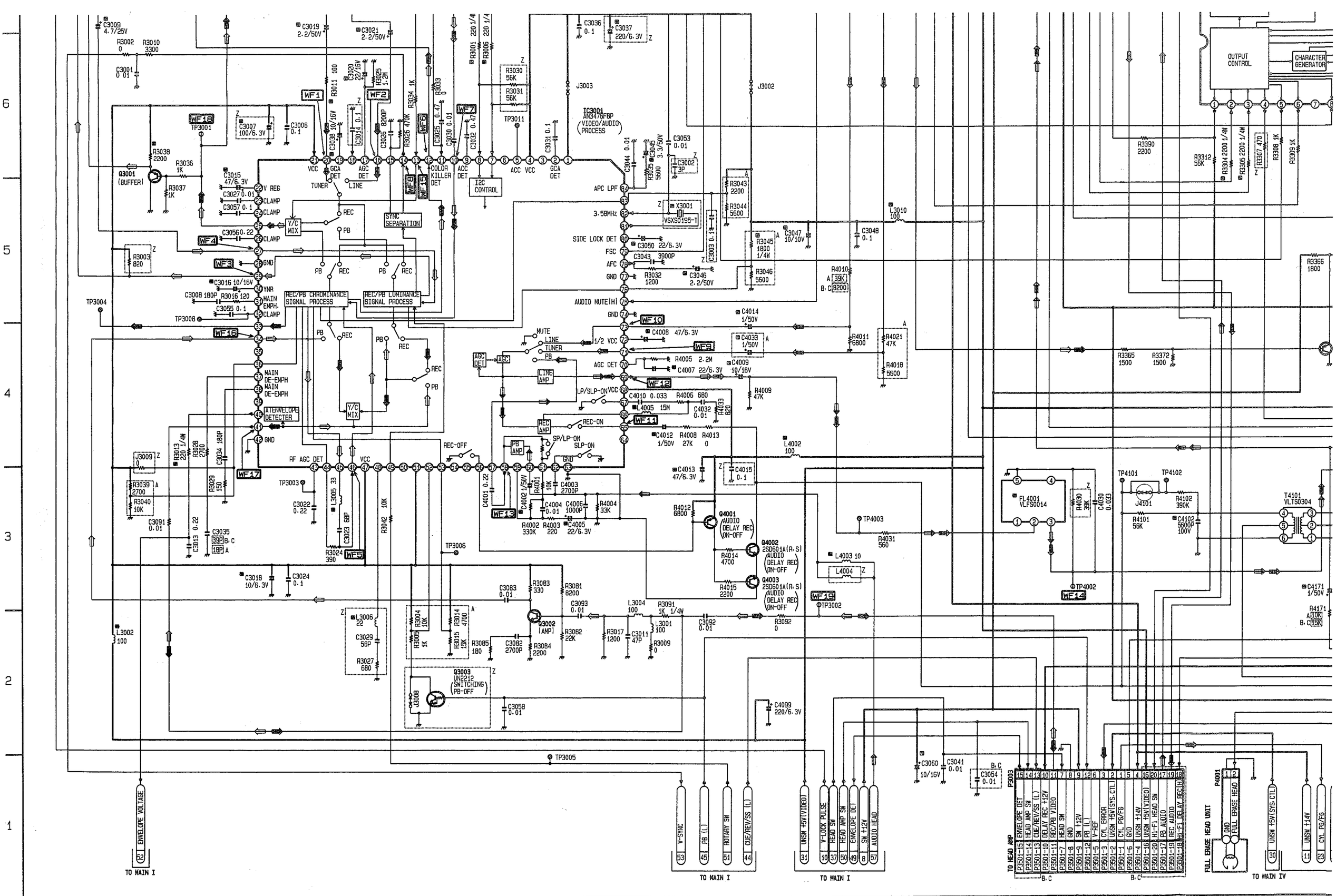


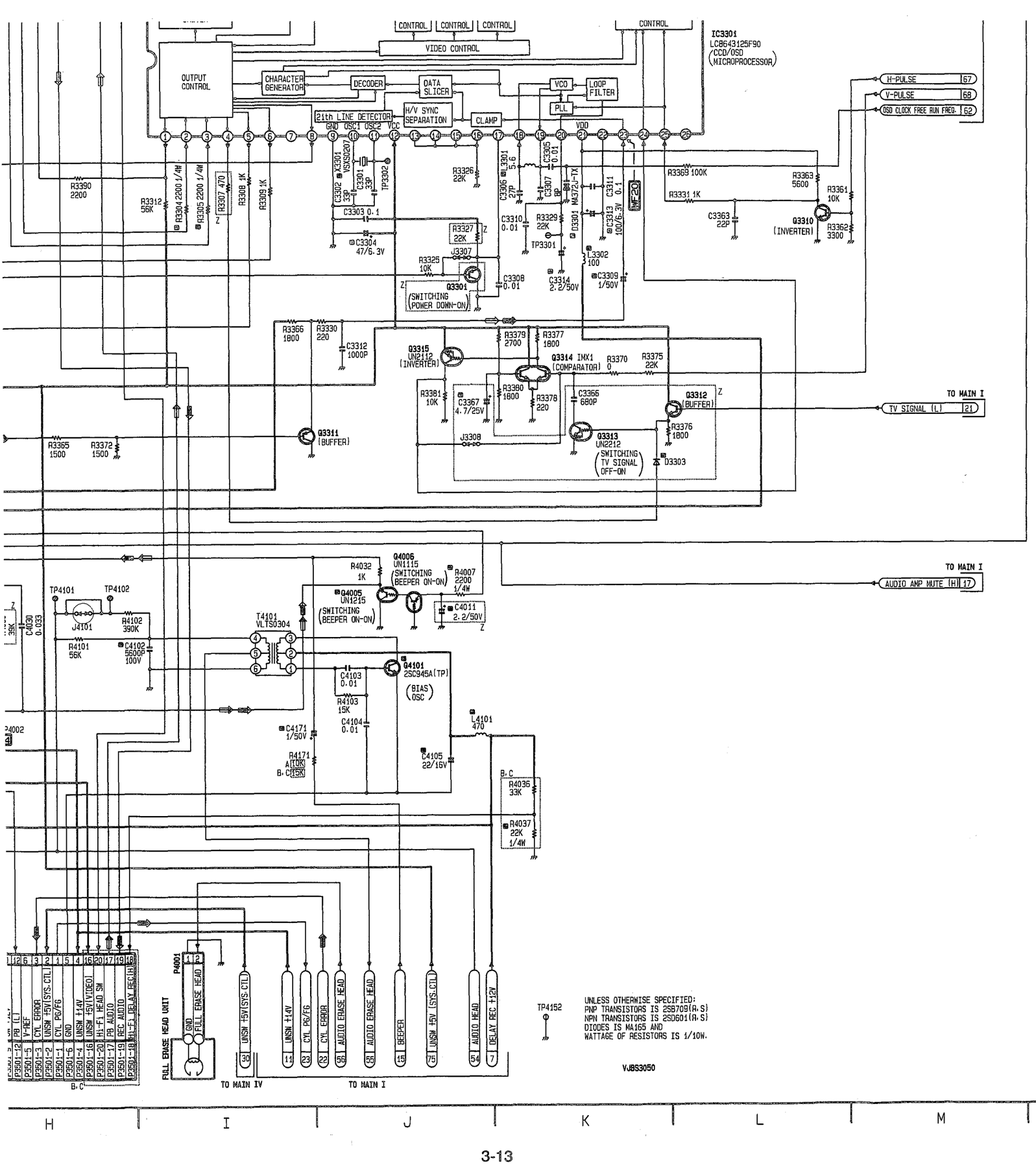
MAIN II VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC3001		
1	5.1	5.1
2	3.3	3.3
3	---	---
4	5.1	5.1
5	4.3	4.3
6	---	---
7	4.2	4.2
8	4.0	4.0
9	2.2	2.2
10	2.8	2.8
11	0.8	0.8
12	2.8	2.8
13	0.4	0.4
14	0.5	0.5
15	1.0	1.0
16	3.1	3.9
17	2.3	1.8
18	3.1	3.1
19	2.6	2.6
20	3.1	3.4
21	5.1	5.1
22	2.0	2.0
23	2.5	2.5
24	2.4	2.4
25	2.0	2.0
26	2.5	2.5
27	2.0	2.0
28	0	0
29	1.9	1.9
30	0	0
31	2.0	2.4
32	2.4	2.4
33	2.0	1.2
34	3.0	2.8

MODE / PIN NO.	REC	PLAY
IC3201		
1	3.4	3.4
2	5.1	5.1
3	0	0
4	3.2	3.2
5	2.9	3.4
6	-2.7	-2.7
7	2.1	2.1
8	3.0	3.0
IC3301		
1	4.2	4.2
2	4.7	4.7
3	5.0	5.0
4	0	0
5	5.1	5.1
6	0	0
7	---	---
8	5.1	5.1
9	0	0
10	2.6	2.6
11	2.4	2.4
12	5.1	5.1
13	0.6	0.6
14	0.6	0.6
15	0.6	0.6
16	0.6	0.6
17	5.1	5.1
18	2.4	2.4
19	2.4	2.4
20	2.6	2.6
21	5.1	5.1
22	0	0
23	2.8	2.8
24	5.0	5.0
25	4.1	4.1

MODE / PIN NO.	REC	PLAY
Q3314		
E1	1.5	1.5
E2	1.5	1.5
C1	5.1	5.1
C2	1.7	1.7
B1	2.1	2.1
B2	1.9	1.9
Q3315		
E	1.7	1.7
C	5.0	5.0
B	5.1	5.1
Q4001		
E	5.1	5.1
C	-20.2	5.1
B	5.1	4.3
Q4002		
E	-21.0	0
C	0	0
B	-14.1	0
Q4003		
E	-20.1	0
C	0	0
B	-13.8	0.8
Q4004		
E	0	0
C	0.2	0.2
B	0	0
Q4005		
E	-4.3	-4.3
C	0	0
B	0	0
Q4006		
E	0	0
C	-4.3	-4.3
B	0	0


IC3001
AN3476FBP
(VIDEO/AUDIO PROCESS)
Q3001 (BUFFER)
Q3002 (AMP)
Q3003 UN2212 (SWITCHING) (PB-OFF)
Q4001 (AUDIO DELAY REC ON-OFF)
Q4002 2SD601A(R,S) (AUDIO DELAY REC ON-OFF)
Q4003 2SD601A(R,S) (AUDIO DELAY REC ON-OFF)
X3001 VSX50195-T
I2C CONTROL
SYNC SEPARATION
Y/C MIX
REC/PB CHROMINANCE SIGNAL PROCESS
REC/PB LUMINANCE SIGNAL PROCESS
ATENVELOPE DETECTER
OUTPUT CONTROL
CHARACTER GENERATOR
FL4001 VLFS0014
T4101 VLTS0304
P3003
TO HEAD AMP
FULL ERASE HEAD UNIT
TO MAIN I
TO MAIN IV
ENVELOPE VOLTAGE
V-SYNC
PB (L)
ROTARY SW
CUE/REV/SS (L)
UNSW +5V(VIDEO)
V-LOCK PULSE
HEAD SW
HEAD AMP SW
ENVELOPE DET
SW +12V
AUDIO HEAD
CYL P6/F6
UNSW +14V
UNSW +5V(SYS.CTL)
PB AUDIO
REC AUDIO
DELAY REC +12V
REC/PB VIDEO
GND
V-REF
CYL ERROR
FULL ERASE HEAD
TP3001
TP3002
TP3003
TP3004
TP3005
TP3006
TP3008
TP3011
TP4002
TP4003
TP4101
TP4102
J3003
J3002
J3009
J4101
L4003 10
L4004
L4002 100
L3010 100
L3002 100
L3001 100
L3004 100
L3006 22
WF1
WF2
WF3
WF4
WF5
WF6
WF7
WF8
WF9
WF10
WF11
WF12
WF13
WF14
WF15
WF16
WF17
WF18
WF19



13	0.4	0.4
14	0.5	0.5
15	1.0	1.0
16	3.1	3.9
17	2.3	1.8
18	3.1	3.1
19	2.6	2.6
20	3.1	3.4
21	5.1	5.1
22	2.0	2.0
23	2.5	2.5
24	2.4	2.4
25	2.0	2.0
26	2.5	2.5
27	2.0	2.0
28	0	0
29	1.9	1.9
30	0	0
31	2.0	2.4
32	2.4	2.4
33	2.0	1.2
34	3.0	2.8
35	2.6	2.6
36	---	---
37	0	1.5
38	4.6	2.2
39	---	---
40	3.8	5.1
41	2.8	3.6
42	0	0
43	3.4	3.4
44	2.6	2.6
45	2.6	2.6
46	2.6	2.6
47	5.1	5.1
48	1.2	1.0
49	2.6	2.6
50	---	---
51	5.1	5.1
52	---	---
53	---	---
54	---	---
55	---	---
56	5.1	0
57	0.8	2.6
58	2.6	2.6
59	2.6	2.6
60	2.6	2.6
61	2.6	2.6
62	0	0
63	0	0
64	---	---
65	2.6	2.6
66	2.6	2.6
67	2.6	2.6
68	5.1	5.1
69	2.7	2.7
70	0	0
71	2.6	2.6
72	2.6	2.6
73	2.6	2.6
74	0	0
75	0	0
76	3.9	3.9
77	0	0
78	2.1	2.1
79	3.0	3.0
80	2.1	2.1
81	---	---
82	2.8	2.8
83	3.7	3.7
84	2.5	2.5

4	0	0
5	5.1	5.1
6	0	0
7	---	---
8	5.1	5.1
9	0	0
10	2.6	2.6
11	2.4	2.4
12	5.1	5.1
13	0.6	0.6
14	0.6	0.6
15	0.6	0.6
16	0.6	0.6
17	5.1	5.1
18	2.4	2.4
19	2.4	2.4
20	2.6	2.6
21	5.1	5.1
22	0	0
23	2.8	2.8
24	5.0	5.0
25	4.1	4.1
26	---	---
27	0	0
28	0	0
29	0	0
30	---	---
31	---	---
32	---	---
33	---	---
34	---	---
35	---	---
36	2.0	2.0
37	---	---
38	---	---
39	---	---
40	---	---
41	3.9	3.9
42	4.6	4.6
43	4.6	4.6
44	4.6	4.6
45	---	---
46	0	0
47	---	---
48	---	---
49	5.1	5.1
50	5.1	5.1
51	5.1	5.1
52	0.2	5.1
Q3001		
E	1.6	1.6
C	0	0
B	1.0	1.0
Q3002		
E	2.7	2.7
C	4.6	4.6
B	3.3	3.3
Q3310		
E	0	0
C	4.2	4.2
B	0	0
Q3311		
E	1.7	1.7
C	0	0
B	1.0	1.0

C	-20.2	5.1
B	5.1	4.3
Q4002		
E	-21.0	0
C	0	0
B	-14.1	0
Q4003		
E	-20.1	0
C	0	0
B	-13.8	0.8
Q4004		
E	0	0
C	0.2	0.2
B	0	0
Q4005		
E	-4.3	-4.3
C	0	0
B	0	0
Q4006		
E	0	0
C	-4.3	-4.3
B	0	0
Q4101		
E	0	0
C	11.3	0.2
B	0.2	0.2
TP3001	2.0	2.0
TP3002	2.7	2.3
TP3003	3.4	3.4
TP3004	2.4	2.4
TP3005	2.6	2.6
TP3006	2.7	2.7
TP3007	3.2	3.2
TP3008	2.4	2.4
TP3009	0	0
TP3010	3.0	3.0
TP3011	4.3	4.3
TP3012	2.9	3.4
TP3301	2.4	2.4
TP3302	5.1	5.1
TP4001	0	0
TP4002	0	0
TP4003	0	0
TP4101	0	0
TP4102	0	0
TP4150	0	0
TP4152	0	0

MAIN III (TV Y/C PROCESS) SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE S
SPECIAL CHARACTERISTICS IMPORT
WHEN REPLACING ANY OF THESE CO
USE ONLY THE SPECIFIED PARTS.

REC VIDEO SIGNAL
PB VIDEO SIGNAL

TO MAIN II
61
3.58MHz(IC3001)
C5606 0
Q5601 (BUFFER)
R5611 8200
R5610 1K
R5612 8200
D5601
R5613 4700

TO MAIN I
16
3.58MHz(IC6001)
R5601 5600
C5607 0.01

TO MAIN II
66 OSD RED
65 OSD GREEN
64 OSD BLUE
63 BLANKING PULSE

TP5306

Q5302 (BUFFER)
R5302 22K
D5304
R5303 4700
R5308 39K
R5304 39K
R5309 180K

(SWITCHING TV POWER ON-ON)
Q5951
R5951 47K
R5953 10K
R5952 10K
Q5952
R5954 22K
R5955 47K
TO MAIN I
TV POWER ON(H) 9
(SWITCHING TV POWER ON-ON)

C5302 4.7/25V
R5305 220K
C5305 0.47/50V
C5602 0.1
C5604 1/50V
R5604 3300
C5605 0.015
R5314 100
R5315 100 1/4W
R5316 100
C5603 15P
X5601 VSXS0208-8
C5601 0.01
IC5301 AN5367FB (LUMINANCE/ CHROMINANCE PROCESS)
R5318 2700
R5306 22K

TO MAIN I
6 SW+ 12V
TO MAIN IV
72 UNSW +14V
R5901 27 1/2W
R5902 1K
C5902 47/16V
Q5901

BLACK LEVEL DETECTOR
VCO

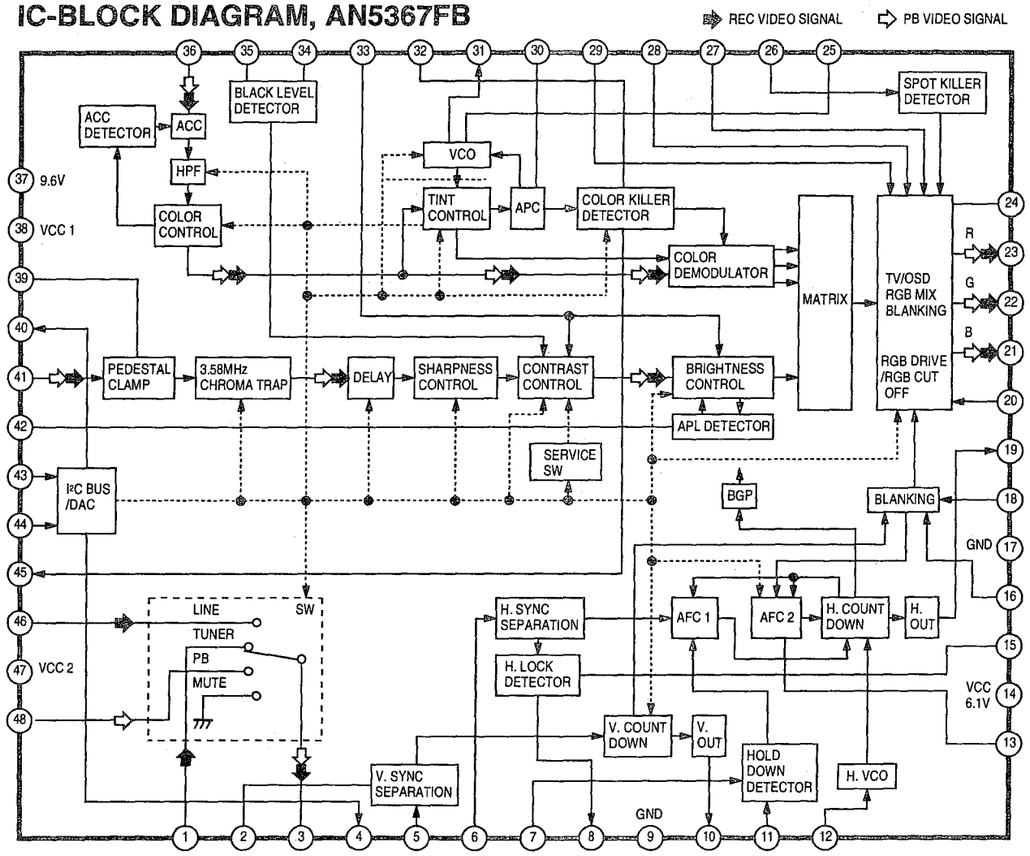
D5301 D5302 D5303

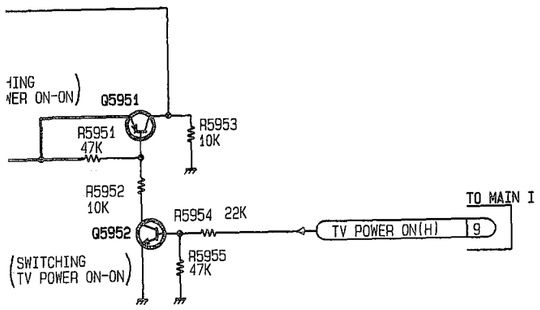
R5956 4700
(SWITCHING TV POWER ON-ON)
Q5953
D5951
C5951 220/16V
D5952 MA4051-M (5.1V)
R5957 47K
D5953 D5954 D5955
TP5301 TP5302 TP5303

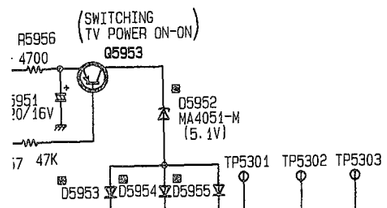
OUT NOTES.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

IC5301 LUMINANCE/CHROMINANCE PROCESS
IC-BLOCK DIAGRAM, AN5367FB







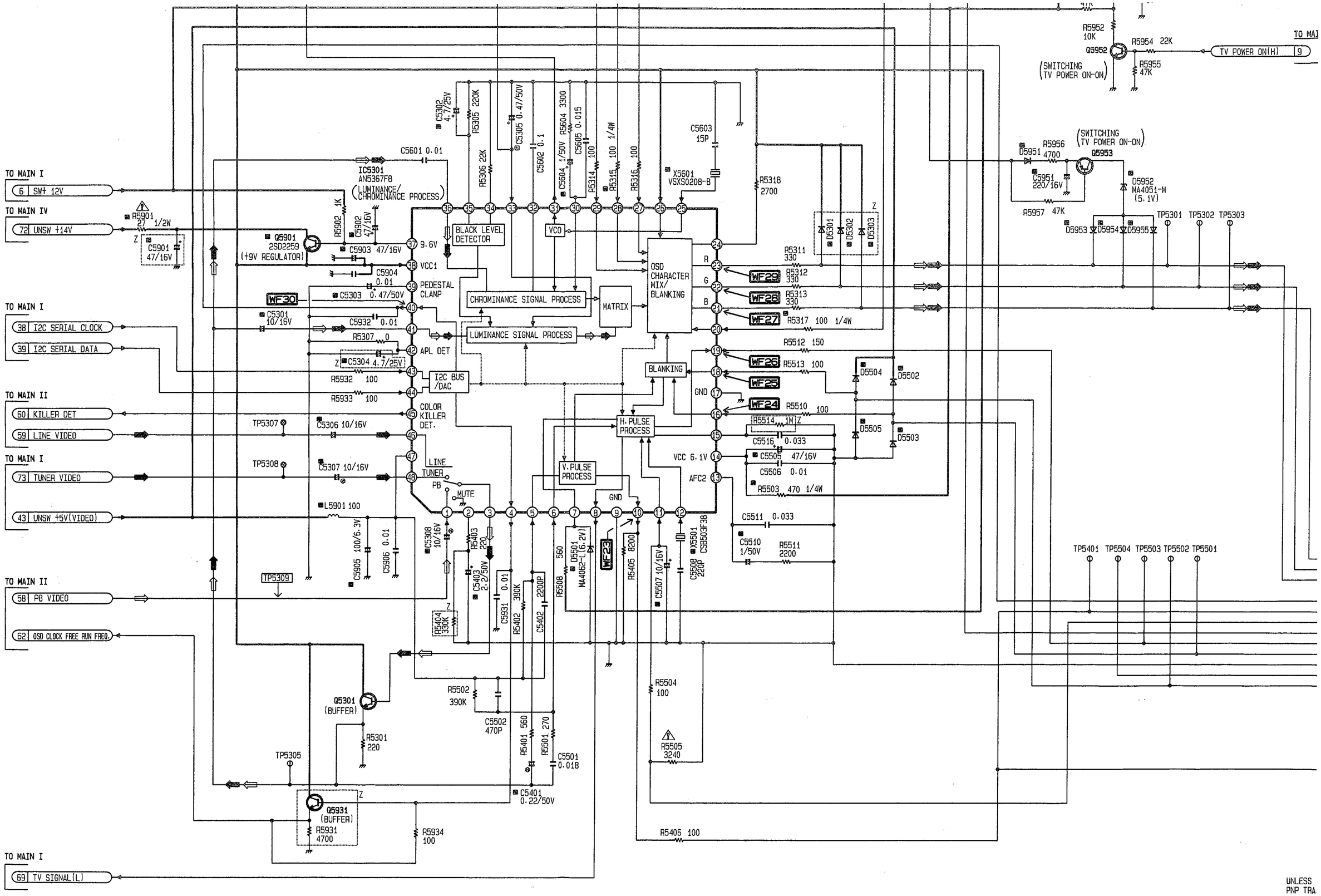
MAIN III VOLTAGE CHART

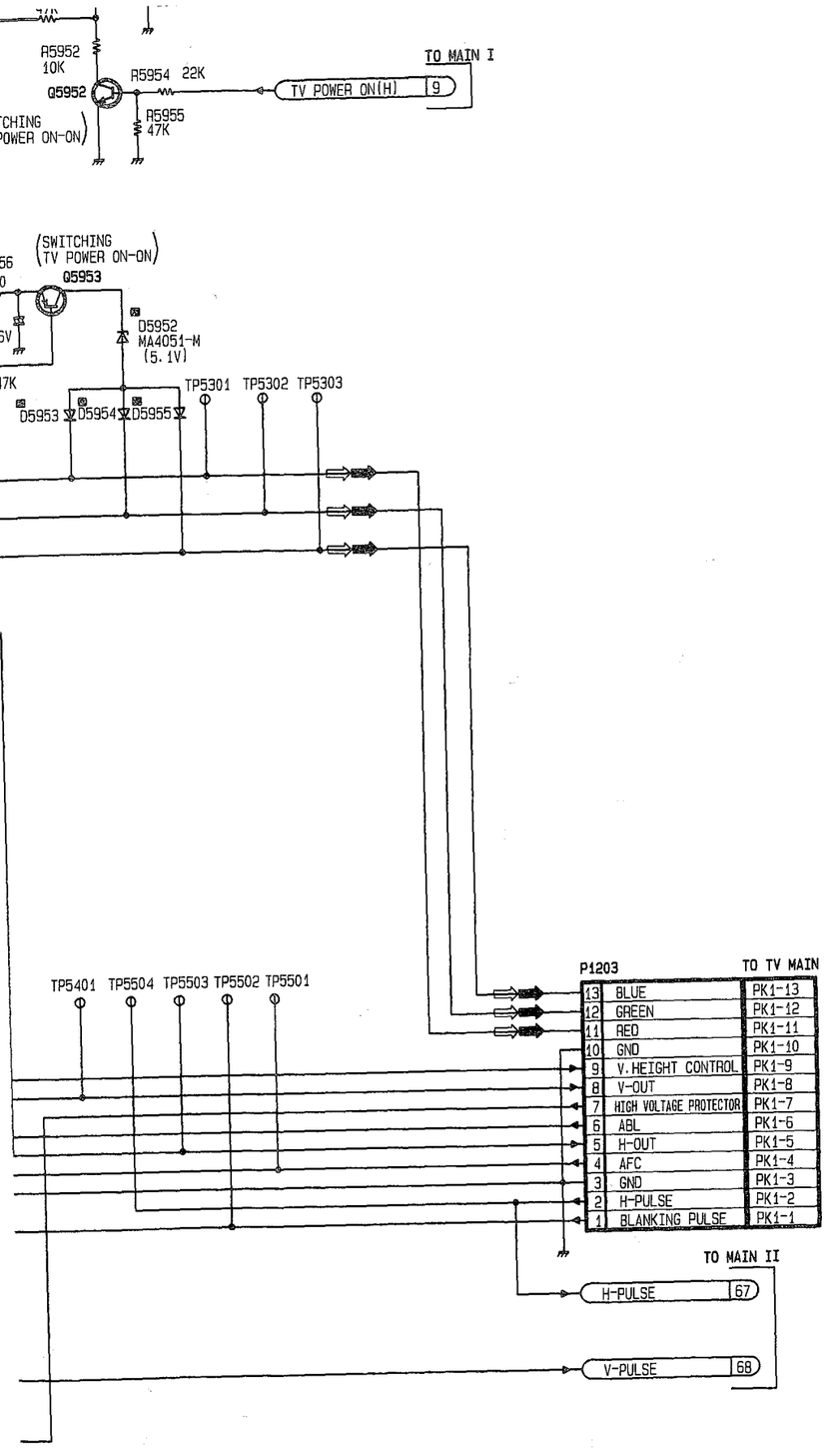
MODE / PIN NO.	REC	PLAY
IC5301		
1	2.7	2.7
2	2.5	2.5
3	3.4	3.4
4	3.1	3.1
5	2.1	2.1
6	2.1	2.1
7	6.2	6.2
8	0	0
9	0	0

MODE / PIN NO.	REC	PLAY
Q5301		
E	2.7	2.7
C	9.2	9.2
B	3.4	3.4
Q5302		
E	6.3	6.3
C	9.2	9.2
B	6.9	6.9
Q5601		
E	4.6	4.6

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z


TO MAIN I
6 SW+ 12V
TO MAIN IV
72 UNSW +14V
R5901 27 1/2W
C5901 47/16V
IC5301 AN5367FB (LUMINANCE/ CHROMINANCE PROCESS)
C5601 0.01
C5302 4.7/25V
R5305 220K
C5305 0.47/50V
C5602 0.1
R5306 22K
C5604 1/50V
R5604 3300
C5605 0.015
R5314 100
R5315 100 1/4W
R5316 100
C5603 15P
X5601 VSXS0208-B
R5318 2700
R5902 1K
C5902 47/16V
Q5901 2SD2259 (+9V REGULATOR)
C5903 47/16V
C5904 0.01
C5303 0.47/50V
C5932 0.01
C5301 10/16V
R5307 0
C5304 4.7/25V
R5932 100
R5933 100
C5306 10/16V
C5307 10/16V
L5901 100
C5905 100/6.3V
C5906 0.01
TP5307
TP5308
TP5309
TP5305
BLACK LEVEL DETECTOR
VCO
CHROMINANCE SIGNAL PROCESS
MATRIX
LUMINANCE SIGNAL PROCESS
OSD CHARACTER MIX/ BLANKING
I2C BUS /DAC
COLOR KILLER DET.
LINE
TUNER
PB
MUTE
H. PULSE PROCESS
V. PULSE PROCESS
BLANKING
GND
VCC 6.1V
AFC2
9.6V
VCC1
PEDESTAL CLAMP
APL DET
R5311 330
R5312 330
R5313 330
R5317 100 1/4W
R5512 150
R5513 100
R5510 100
R5514 1M
C5516 0.033
C5505 47/16V
C5506 0.01
R5503 470 1/4W
C5511 0.033
C5510 1/50V
R5511 2200
D5301
D5302
D5303
D5504
D5502
D5505
D5503
TO MAIN I
38 I2C SERIAL CLOCK
39 I2C SERIAL DATA
TO MAIN II
60 KILLER DET
59 LINE VIDEO
TO MAIN I
73 TUNER VIDEO
43 UNSW +5V(VIDEO)
TO MAIN II
58 PB VIDEO
62 OSD CLOCK FREE RUN FREQ.
TO MAIN I
69 TV SIGNAL(L)
R5403 220
C5403 2.2/50V
C5931 0.01
R5404 330K
R5402 390K
C5402 2200P
R5508 560
D5501 MA4062-L(6.2V)
WF23
R5405 8200
C5507 10/16V
C5508 220P
X5501 CSB503F38
R5502 390K
C5502 470P
Q5301 (BUFFER)
R5301 220
R5401 560
R5501 270
C5501 0.018
C5401 0.22/50V
Q5931 (BUFFER)
R5931 4700
R5934 100
R5504 100
R5505 3240
R5406 100
R5952 10K
Q5952
R5954 22K
R5955 47K
(SWITCHING TV POWER ON-ON)
TV POWER ON(H) 9
TO MAI
R5956 4700
Q5953
C5951 220/16V
R5957 47K
D5951
D5952 MA4051-M (5.1V)
D5953
D5954
D5955
TP5301 TP5302 TP5303
TP5401 TP5504 TP5503 TP5502 TP5501
UNLESS
PNP TRA
NPN TRA
DIODES
WATTAGE



UNLESS OTHERWISE SPECIFIED:
PNP TRANSISTORS IS 2SB709(R,S),
NPN TRANSISTORS IS 2SD601(R,S),
DIODES IS MA165 AND
WATTAGE OF RESISTORS IS 1/10W.

VJBS3050

H I J K

MAIN III VOLTAGE CHART

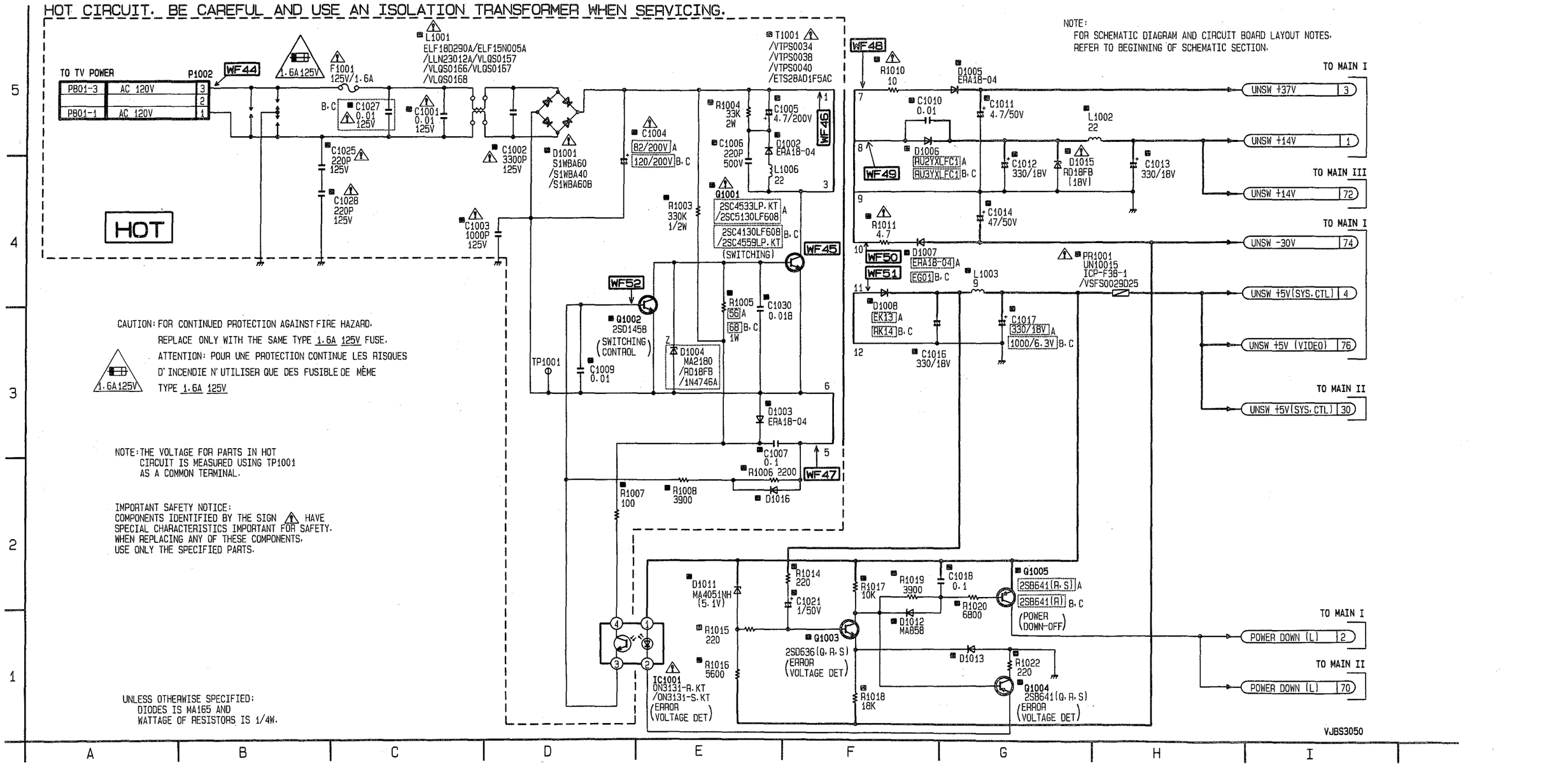
MODE / PIN NO.	REC	PLAY
IC5301		
1	2.7	2.7
2	2.5	2.5
3	3.4	3.4
4	3.1	3.1
5	2.1	2.1
6	2.1	2.1
7	6.2	6.2
8	0	0
9	0	0
10	3.8	3.8
11	4.9	4.9
12	2.8	2.8
13	4.2	4.2
14	6.4	6.4
15	4.3	4.3
16	0.6	0.6
17	0	0
18	0.6	0.6
19	2.2	2.2
20	0	0
21	3.7	3.7
22	3.7	3.7
23	3.7	3.7
24	6.0	6.0
25	2.7	2.7
26	9.2	9.2
27	0	0
28	0	0
29	0	0
30	5.8	5.8
31	3.3	3.3
32	3.7	3.7
33	6.3	6.3
34	0	8.3
35	0	4.9
36	4.3	4.3
37	9.7	9.7
38	0	0
39	2.3	2.3
40	2.1	2.1
41	2.0	2.0
42	0	0
43	4.9	4.9
44	4.9	4.9
45	0.4	0.4
46	2.5	2.5
47	5.1	5.1
48	2.7	2.7

MODE / PIN NO.	REC	PLAY
Q5301		
E	2.7	2.7
C	9.2	9.2
B	3.4	3.4
Q5302		
E	6.3	6.3
C	9.2	9.2
B	6.9	6.9
Q5601		
E	4.6	4.6
C	9.2	9.2
B	4.0	4.0
Q5901		
E	9.2	9.2
C	11.9	11.9
B	9.8	9.8
Q5931		
E	2.5	2.5
C	9.2	9.2
B	3.1	3.1
Q5951		
E	12.1	12.1
C	12.0	12.0
B	11.3	11.3
Q5952		
E	0	0
C	0.1	0.1
B	0.6	0.6
Q5953		
E	11.3	11.3
C	-4.9	-4.9
B	12.3	12.3
TP5301	3.6	3.6
TP5302	3.6	3.6
TP5303	3.6	3.6
TP5305	2.7	2.7
TP5306	4.4	4.4
TP5307	0	0
TP5308	1.3	1.3
TP5309	1.6	1.6
TP5401	3.8	3.8
TP5501	0.6	0.6
TP5502	0.6	0.6
TP5503	0	0
TP5504	0	0

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

MAIN IV (POWER SUPPLY) SCHEMATIC DIAGRAM



MAIN IV
VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC1001		
1	5.1	5.1
2	4.4	4.4
3	2.2	2.2
4	0.6	0.6
Q1001		
E	0	0
C	133.5	133.5
B	0.3	0.3
Q1002		
E	0	0
C	0.3	0.3
B	0.6	0.6
Q1003		
E	-0.6	-0.6
C	4.1	4.1
B	0	0
Q1004		
E	4.4	4.4
C	0.1	0.1
B	4.1	4.1
Q1005		
E	5.1	5.1
C	5.1	5.1
B	4.7	4.7
TP1001	0	0

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

TV MAIN / CRT / TV POWER / TV MAIN CHILD SCHEMATIC DIAGRAM

VIDEO SIGNAL REC AUDIO SIGNAL PB AUDIO SIGNAL

UHF/VHF TUNER/TV DEMODULATOR UNIT U7001 VEQS0598

19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
FM (L)	UNSW +5V (SYS.CTL)	VIDEO	AUDIO	SW +12V	AFC	DTS CS(H)	UNSW +5V (SYS.CTL)	SERIAL DATA 0	CH FREQUENCY LOCK (L)	TUNER SIGNAL (L)	SERIAL CLOCK	SW +12V	UNSW -30V	FM (L)	SW +12V	UNSW +5V (SYS.CTL)	GND	RF ANT

J7002 Z

L7001 10
C7001 1000/6.3V
C7013 10/16V
R7002 270
C7004 6800P Z
C7031 33P
C7007 0.1
R7030 1800
R7031 1800
C7002 33P
C7018 0.01
J7001
C7008 220/16V
C7019 0.01
C7032 33P
R7032 1800
C7033 0.01
C7014 0.01
C7010 0.01
L7002 100
C7034 0.01

FOIL PATTERN FOR ANTENNA

B.C
JK202
AUDIO OUT (R)
AUDIO OUT (L)
D201 HZS5C2TD (5.2V)
D202 HZS5C2TD (5.2V)

R575 330

PK5 NO CONNECTION

5	TP 49
4	GND
3	I2C SERVICE
2	I2C SERIAL DATA
1	I2C SERIAL CLOCK

(PK5 IS USED FOR ADJUSTMENT AT FACTORY ONLY)

CRT C.B.A

C357 0.1 Z

TP47E
TP49
TP48

A5 C5
A4 C4
A3 C3
A1 C1
A2 C2
A8 C8
A11 C11
A6 C6

R561 3.3 3W

TO MAIN PK2

P1202-19	I2C SERVICE	19
P1202-18	I2C SERIAL DATA	18
P1202-17	I2C SERIAL CLOCK	17
P1202-16	TUNER VIDEO	16
P1202-15	SW +12V	15
P1202-14	TUNER AUDIO	14
P1202-13	TV POWER ON(H)	13
P1202-12	AFC	12
P1202-11	DTS CS(H)	11
P1202-10	SERIAL DATA 0	10
P1202-9	CH FREQUENCY LOCK(L)	9
P1202-8	TUNER SIGNAL(L)	8
P1202-7	SERIAL CLOCK	7
P1202-6	UNSW -30V	6
P1202-5	AUDIO R CH	5
P1202-4	AUDIO L CH	4
P1202-2	UNSW +5V(VIDEO)	2
P1202-3	FM (L)	3
P1202-1		1

TO MAIN PK1

P1203-13	BLUE	13
P1203-12	GREEN	12
P1203-11	RED	11
P1203-10	GND	10
P1203-9	V.HEIGHT CONTROL	9
P1203-8	V-OUT	8
P1203-7	HIGH VOLTAGE PROTECTOR	7
P1203-6	ABL	6
P1203-5	H-OUT	5
P1203-4	AFC	4
P1203-3	GND	3
P1203-2	H-PULSE	2
P1203-1	BLANKING PULSE	1

TO MAIN PK3

P1201-1	GND	1
P1201-2	GND	2
P1201-3	GND	3
P1201-4	DC +17V	4
P1201-5	DC +17V	5
P1201-6	GND	6
P1201-7	GND	7

R512 1K

D503 ERB43-04V

IC451 LA7837 (VARTICAL DEFLECTION DRIVE)

ONE SHOT MULTI
RAMP GENERATOR
VERTICAL DRIVE
THERMAL PROTECTION
VERT. TRIG. INPUT
VERT. HEIGHT CONTROL
PUMP UP
VERTICAL OUT
VCC

1	2	3	4	5	6	7	8	9	10	11	12	13

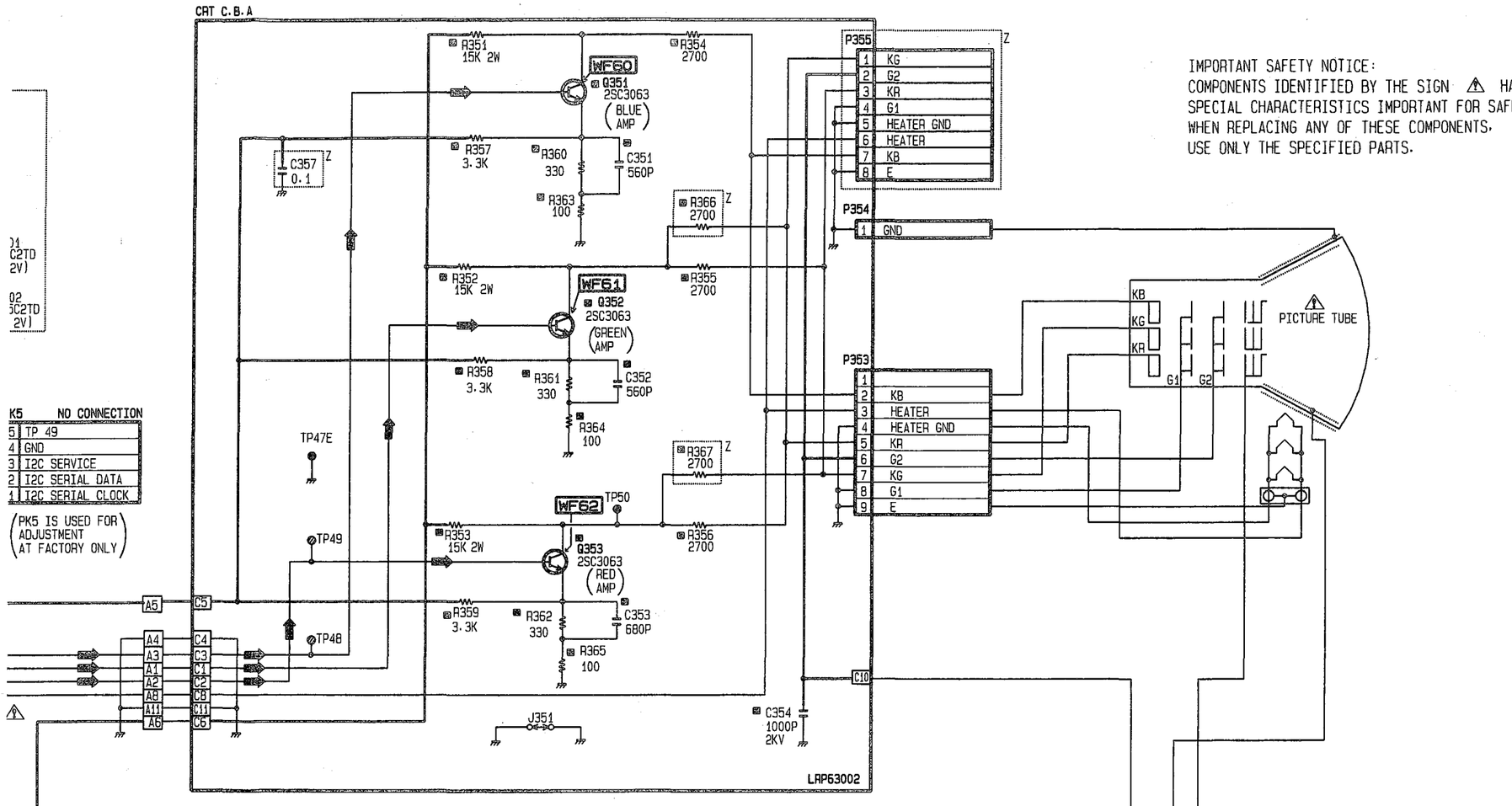
R468 10K
R422 100
R466 68K
C458 0.01
R410
C408 1/50V
R406 330K
C409 100/35V
WF250

TP52
TP51

R558 1K 2W
R532 1K 2W
L501 ELH5L7017 /LLH6602T
R580 470 2W
D580 MA185 Z
C556 0.56 200V

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

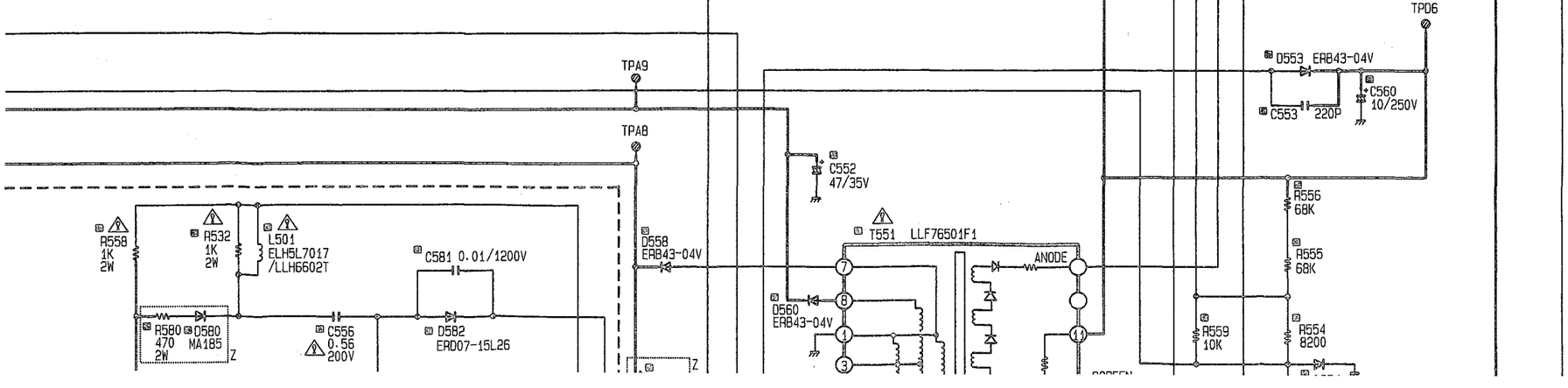
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.



K5 NO CONNECTION

5	TP 49
4	GND
3	I2C SERVICE
2	I2C SERIAL DATA
1	I2C SERIAL CLOCK

(PK5 IS USED FOR ADJUSTMENT AT FACTORY ONLY)



COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

TV MAIN VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC451		
1	10.4	10.4
2	3.8	3.8
3	5.1	5.1
4	0	0
5	0	0
6	0	0
7	5.1	5.1
8	24.5	24.5
9	1.9	1.9
10	1.3	1.3
11	0	0
12	11.8	11.8
13	24.9	24.9
Q431		
E	0	0
C	0	0
B	2.1	2.1
Q501		
E	0	0
C	71.8	71.8
B	0	0
Q551		
E	0	0
C	920.0	920.0
B	0	0
Q801		
E	0.1	0.1
C	0.3	0.3
B	0	0
TP51	0	0
TP52	0	0
TPA8	24.5	24.5

CRT VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
Q351		
E	3.7	3.7
C	137.0	137.0
B	4.0	4.0
Q352		
E	3.5	3.5
C	143.0	143.0
B	3.8	3.8
Q353		
E	3.7	3.7
C	138.5	138.5
B	4.0	4.0
TP47E	0	0
TP48	4.0	4.0
TP49	4.0	4.0
TP50	139.0	139.0

TV MAIN CHILD VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
Q505		
E	12.1	12.1
C	0	0
B	12.0	12.0
Q506		
E	2.9	2.9
C	0	0
B	2.9	2.9
Q507		
E	0	0
C	2.9	2.9

P1203-8	V-OUT
P1203-7	HIGH VOLTAGE PROTECTOR
P1203-6	ABL
P1203-5	H-OUT
P1203-4	AFC
P1203-3	GND
P1203-2	H-PULSE
P1203-1	BLANKING PULSE

TO MAIN PK3

P1201-1	GND	1
P1201-2	GND	2
P1201-3	GND	3
P1201-4	DC +17V	4
P1201-5	DC +17V	5
P1201-6	GND	6
P1201-7	GND	7

TO STEREO AMP PK10

P4603-3	GND	3
P4603-2	GND	2
P4603-1	DC +17V	1

D503 ERB43-04V

IC451 LA7837 (VARTICAL DEFLECTION DRIVE)

ONE SHOT MULTI, RAMP GENERATOR, VERTICAL DRIVE, THERMAL PROTECTION, VERT. TRIG. INPUT, VERT. HEIGHT CONTROL, PUMP UP, VERTICAL OUT

VCC, 1 2 3 4 5 6 7 8 9 10 11 12 13

R468 10K, R466 68K, C458 0.01, R422 100, C402 470/16V, R434 10K, R435 1K, Q431 2SA733(TQ) (BUFFER), R433 4700, R432 56K, R411 82K, R415 1.2 1W, R410 2700, C408 1/50V, R409 27K, C401 2.2/50V, R401 560, R402 10K, R413 33K, R406 330K, C409 100/35V, D401 ERB12-01V, C418 100/35V, C413 0.1, R427 5.6, R414 1.2, C414 2200/16V, R431 10K, R471 1200, R405 560 2W, R470 2700, TP52, TP51

R558 1K 2W, R532 1K 2W, L501 ELH5L7017 /LLH6602T, C58, R580 470 2W, D580 MA185, C556 0.56 200V, R518 2400/3W, R516 3600 2W, WF58, L553 TLH, WF57, WF56, Q551 2SD1555LBMTV /2SD2499LBMA (HORIZONTAL DRIVE), T502 ETE16Z37AY, R502 3300, Q501 2SC2653H-CL (HORIZONTAL DRIVE), T501 ETH19Y70AY, C510 680P 500V, C813 3300P, R511 2700 2W, L552 TSC925, C554 5600P 1200V, JA

DEFLECTION YOKE

TV MAIN CHILD C.B.A

P503: H-OUT, GND, H-OUT, SW +12V

P502: +27V, V PROTECT, TV POWER ON (H), BLANKING PULSE, H-PULSE, AFC

P501: HIGH VOLTAGE PROTECTOR, OVER CURRENT, GND, +27V, HIGH VOLTAGE PROTECTOR, H AFC PULSE, BLANKING PULSE

C513 10/50V, R520 5600, C531 390P, C504 1000P, R519 56K, R507 4700, D502 MA165, R510 0, R505 4700, R526 1.5M, D507 MA4200-H (20V), Q505 2SA733(TQ) (EXCESSIVE CURRENT PROTECTOR), C523 1/50V, R524 22K, C516 0.01, D508 MA165, R525 8200, R503 11.5K, R501 820, R523 33K, C521 10/50V, Q506 2SA733(TQ) (EXCESSIVE CURRENT PROTECTOR), C520 0.01, Q507 2SC945A(TQ) (EXCESSIVE CURRENT PROTECTOR), R528 2700, R521 100, R522 10K, R572 2200, Q571 2SC945A(TQ) (BUFFER), R574 2700, R571 100, R573 10, Q541 2SA733(TQ) (EXCESSIVE CURRENT PROTECTOR), R541 47K, D541 MA165, C541 10/50V, R542 10K, R544 4700, R543 4700, C558 100/35V

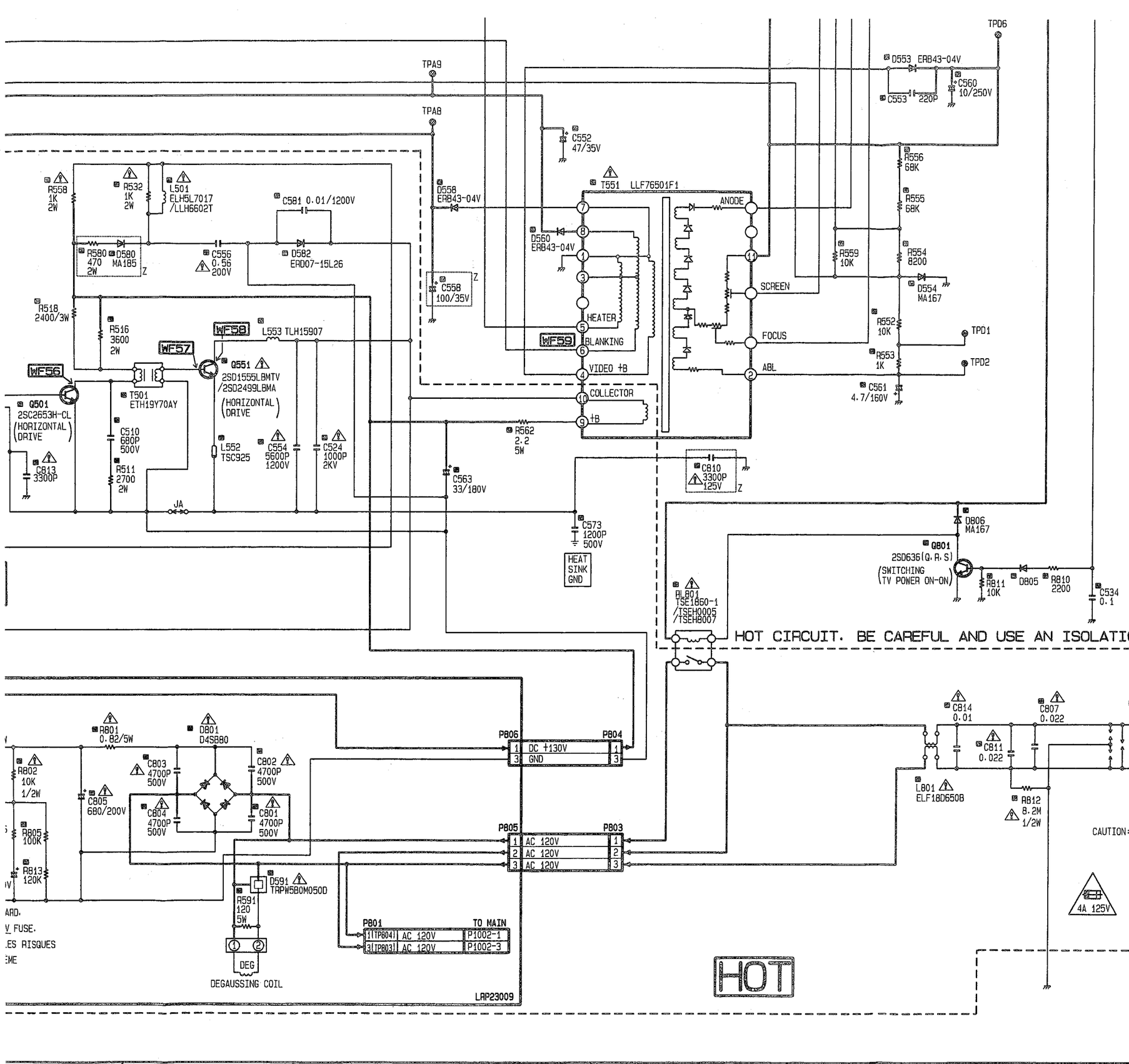
LAP23011

TV POWER C.B.A.

TP891, TP892, TP893, R804 130 20W, R803 8.2/10W, L802 22, F802 1.5A/125V, 1.5A 125V, IC801 STR30130 (+130V REGULATOR), 130V REGULATOR, R802 10K 1/2W, R806 47, R805 100K, C806 33/250V, R813 120K, R801 0.82/5W, D801 D4SB80, C803 4700P 500V, C804 4700P 500V, C805 680/200V, C802 4700P 500V, C801 4700P 500V, D591 TRPW5B, R591 120 5W, DEG, DEGAUSSING COIL

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE 1.5A 125V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE 1.5A 125V

1.5A125V



13	24.9	24.9
Q431		
E	0	0
C	0	0
B	2.1	2.1
Q501		
E	0	0
C	71.8	71.8
B	0	0
Q551		
E	0	0
C	920.0	920.0
B	0	0
Q801		
E	0.1	0.1
C	0.3	0.3
B	0	0
TP51	0	0
TP52	0	0
TPA8	24.5	24.5
TPA9	17.3	17.3
TPD1	-30.5	-30.5

TP47E	0	0
TP48	4.0	4.0
TP49	4.0	4.0
TP50	139.0	139.0

TV MAIN CHILD VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
Q505		
E	12.1	12.1
C	0	0
B	12.0	12.0
Q506		
E	2.9	2.9
C	0	0
B	2.9	2.9
Q507		
E	0	0
C	2.9	2.9
B	0	0
Q541		
E	16.7	16.7
C	0	0
B	14.3	14.3
Q571		
E	1.4	1.4
C	12.0	12.0
B	0	0

TV POWER VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC801		
1	0	0
2	125.9	125.9
3	131.0	131.0
4	125.2	125.2
5	0	0
TP891	125.2	125.2
TP892	131.0	131.0
TP893	0	0

H I J K L M N O P

Hi-Fi AUDIO SCHEMATIC DIAGRAM (B,C)

10 9 8 7 6

REC AUDIO SIGNAL PB AUDIO SIGNAL

TO MAIN	P4201	
PIN-1	AUDIO -5.6V	1
PIN-2	FM MONO (L)	2
PIN-3	FM STEREO (L)	3
PIN-4	TUNER AUDIO	4
PIN-5	AUDIO DEFEAT (H)	5
PIN-6	MAIN (H)/SAP (L)	6
PIN-7	STEREO(H)/MONO(L)	7
PIN-8	MTS SIGNAL (L)	8

TO MAIN	P4202	
PIN-9	SAP SIGNAL (L)	9
PIN-10	GND	10
PIN-11		11
PIN-12	UNSW +5V (VIDEO)	12
PIN-13	SW +12V	13

TO STEREO AMP	P4301	
P4601-1	GND	1
P4601-2	AUDIO L CH	2
P4601-3	GND	3
P4601-4	AUDIO R CH	4
P4601-5	AUDIO AMP MUTE (H)	5
P4601-6	DC +17V	6
P4601-7		7

IC4951 VCRS0216 (MTS/SAP AUDIO PROCESS)

PHASE DETECTOR, VCO, 1/4, 1/2, SAP DEMODU, SAP DETECTOR, SAP BPF, PILOT DETECTOR, PILOT CANCEL, L-R DEMODU, L-R LPF, LPF, NOISE DETECTOR, BPF, AMP, MTS LED DRIVE, SAP LED DRIVE, L+R LPF, 70uS DE-EMPHASIS, MTS, SAP, MODE SELECTOR, WF68, MATRIX, dBX NOISE REDUCTION

GND 1 | 2 | 3 | VDD 4 | 5 | 6 | 7 | 8 | 9 | LCH GND 10 | RCH 11 | 12

R4327 1800
R4953 22K Z
R4954 0
Q4951 UN2212 (SWITCHING STEREO-ON) Z
J4951 Z 0
J4952 0
R4951 10KB SEPARATION ADJ
R4952 10K 1/4W Z
J4953 0

R4308 100

R4301 5600
R4302 10K
C4301 10/16V
C4304 100/16V
C4305 0.01
C4308 0.47
C4309 10/16V
R4319 1K
C4310 1/50V
C4311 47/16V
C4317 1/50V
R4310 0

IC4301 CXA1279AS (TONE CONTROL)
VCC 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12
TONE, VCA, TONE, VCA, CONTROL & BIAS, REG
GND 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11

R4303 5600
C4302 10/16V
C4306 0.01
C4312 0.47
C4313 1/50V
R4304 10K
R4312 12K
C4315 1/50V
R4321 22K
R4323 12K
R4320 22K
C4314 1/50V
R4328 1K

Z R4314 56K
C4307 1/50V
Q4304 UN2113 (SWITCHING MUTE-ON)
R4305 150K
Q4305 2SD601 (SWITCHING MUTE-ON)
R4315 150K

D4302
R4324 120K
D4305
C4318 100/16V
R4325 1K
Q4306 2SB709(R,S) (POWER ON/OFF MUTING)
R4326 120K
C4316 2.2/50V
D4306

D4303 Z
D4304

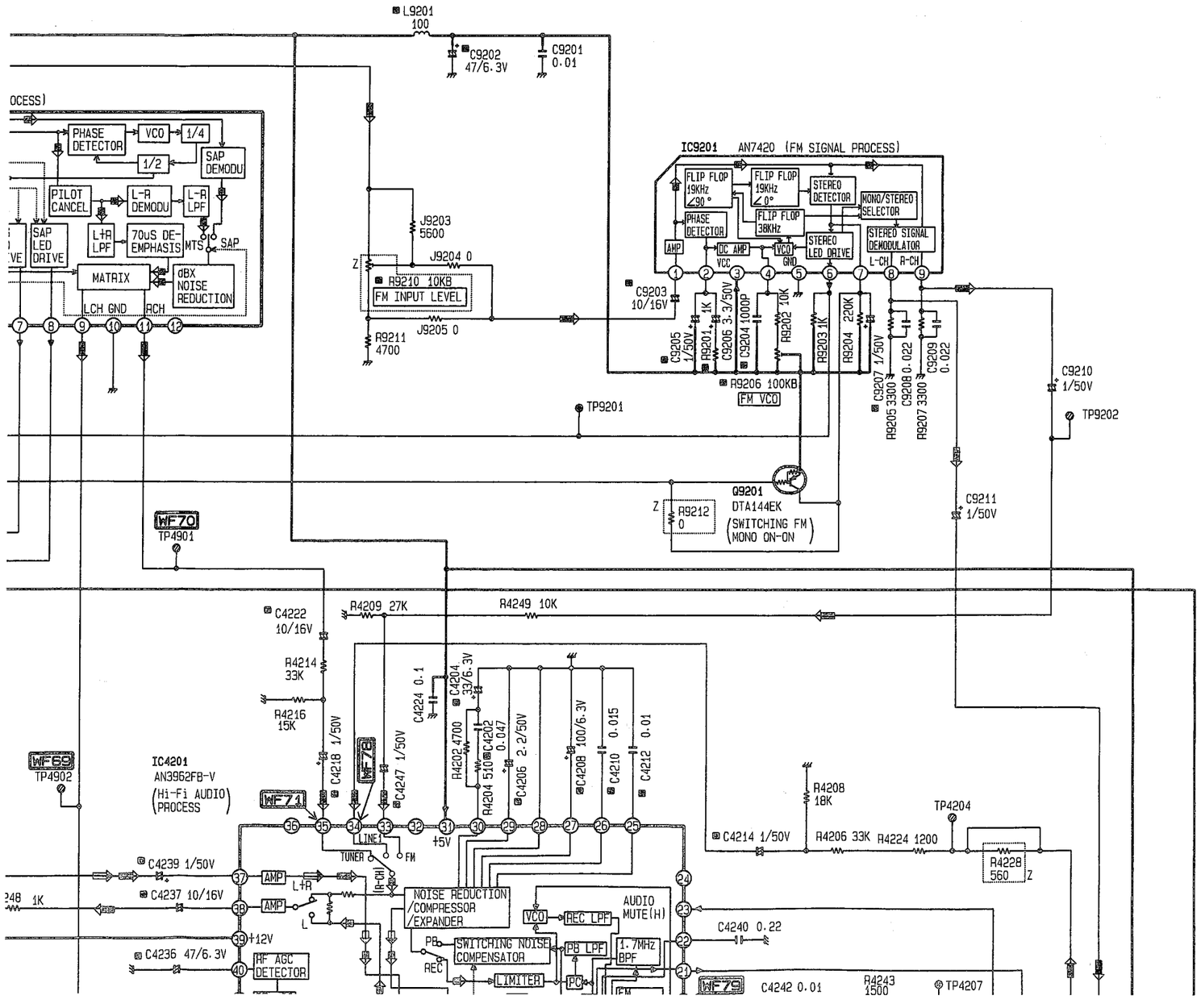
C4951 47/15V

WF70 TP4901
WF69 TP4902

C4222 10/16V
R4209 2
R4214 33K
R4216 15K
C4218 1/50V
WF72

IC4201 AN3962FB-V (Hi-Fi AUDIO PROCESS)
WF71
36 | 35 | 34 | 33
LINE1
TUNER
37 AMP L+R
38 AMP L
39 +12V
40 RF AGC DETECTOR

R4246 27K
R4247 10K
R4248 1K
C4239 1/50V
C4237 10/16V
C4236 47/6.3V
D4201
C4245 0.1



NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

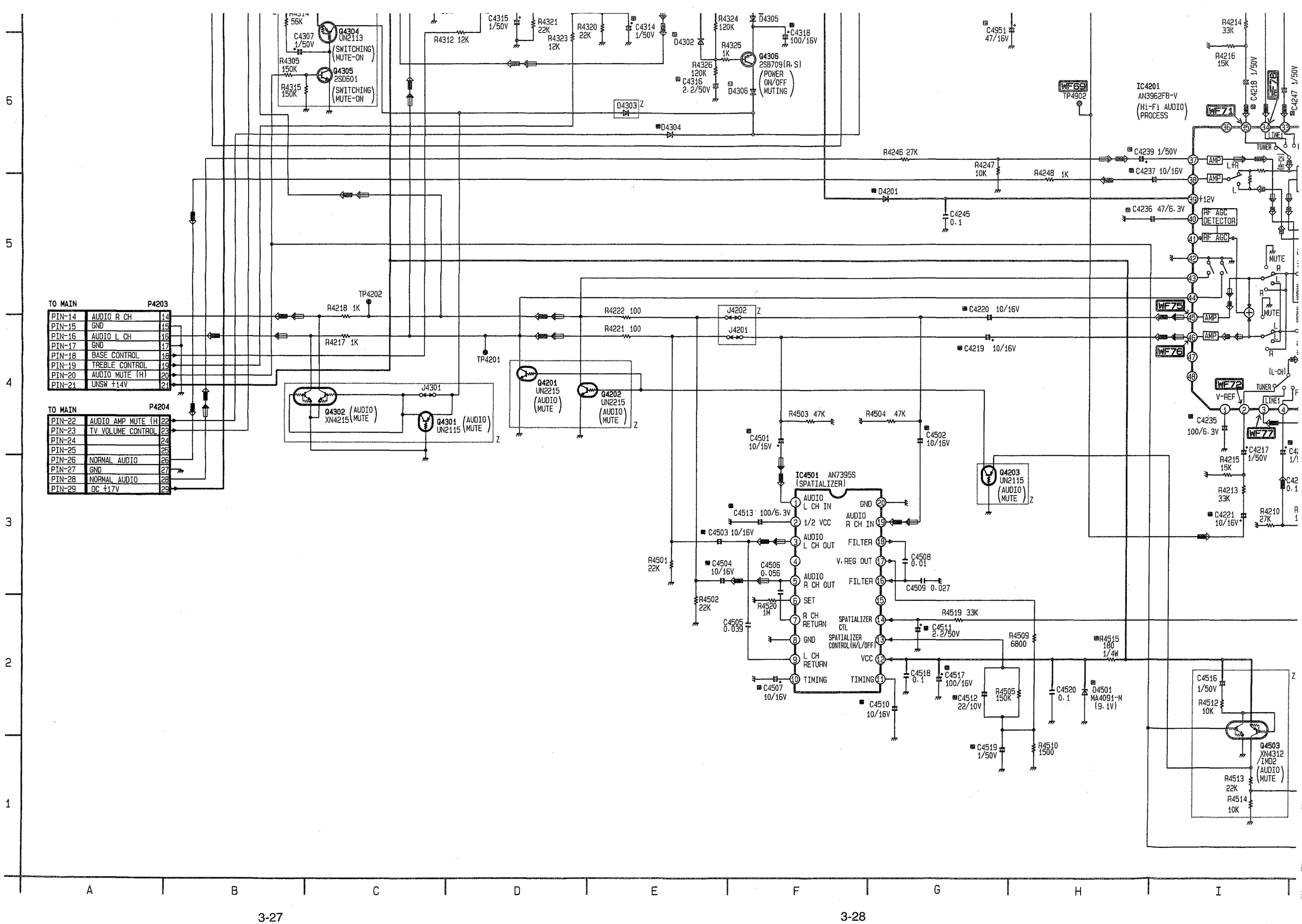
MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

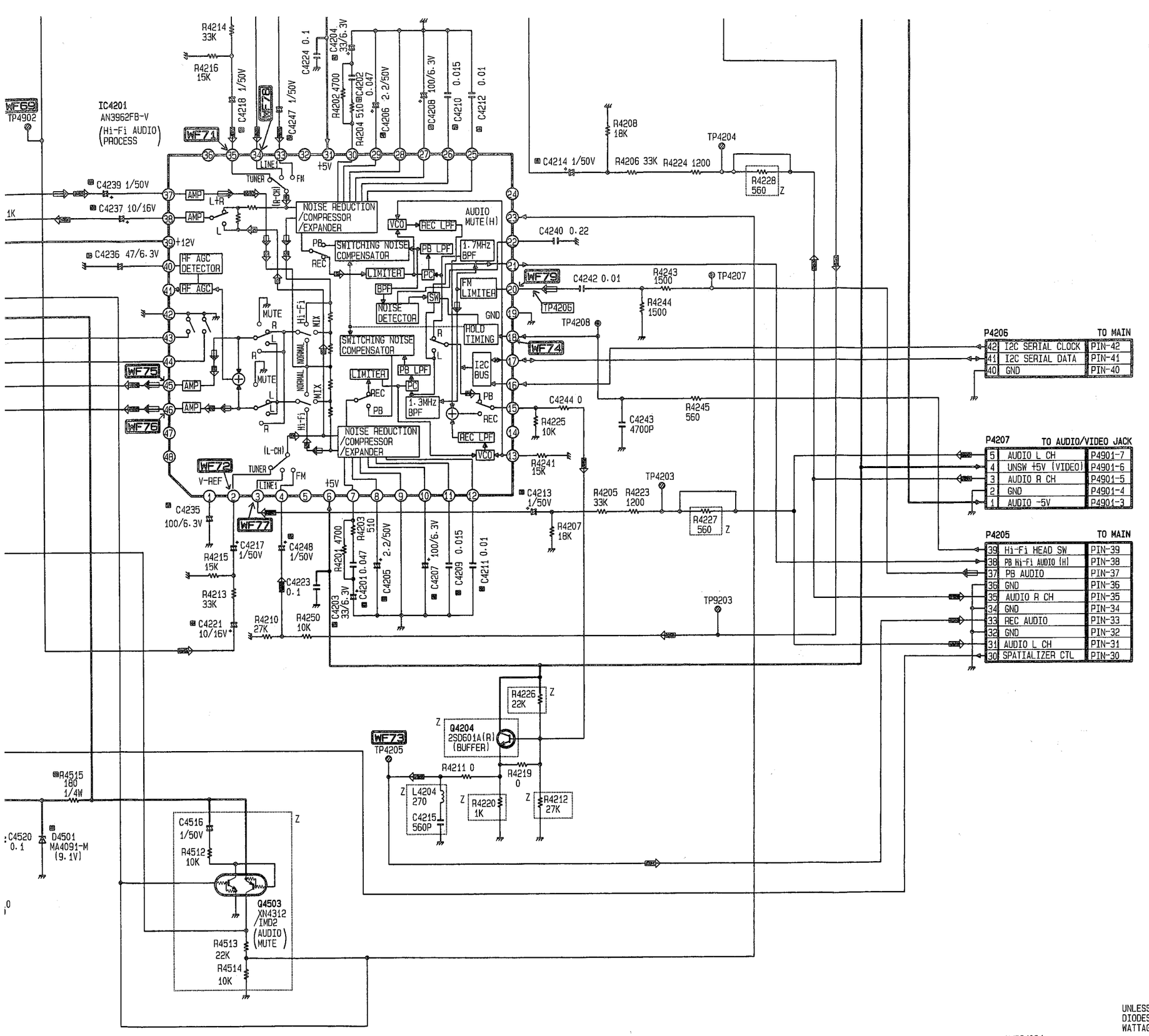
Hi-Fi AUDIO VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC4201		
1	2.6	2.6
2	2.6	2.6
3	2.6	2.6
4	2.6	2.6
5	---	---
6	5.1	5.1
7	2.6	2.6
8	2.6	2.6
9	0	0
10	2.6	2.6
11	2.6	2.6
12	2.6	2.6
13	2.6	2.6
14	---	---
15	2.6	2.6
16	4.2	4.2
17	4.0	4.0
18	0	0
19	2.6	2.6
20	2.6	2.6
21	0	0

MODE / PIN NO.	REC	PLAY
15	2.6	2.6
16	2.4	2.4
17	6.3	6.3
18	6.2	6.2
19	---	---
20	---	---
21	12.0	12.0
22	6.1	6.1
IC4501		
1	0	0
2	4.8	4.8
3	4.8	4.8
4	---	---
5	4.8	4.8
6	4.8	4.8
7	4.8	4.8
8	0	0
9	4.8	4.8
10	0.8	0.8
11	0.5	0.5
12	9.2	9.2
13	2.2	1.1

MODE / PIN NO.	REC	PLAY
Q9201		
E	5.1	5.1
C	4.4	4.4
B	5.1	5.1
TP4201	0	0
TP4202	0	0
TP4203	0	0
TP4204	0	0
TP4205	2.7	2.7
TP4206	2.7	2.7
TP4207	0	0
TP4901	4.5	4.5
TP4902	4.5	4.5
TP4903	0	0
TP9201	5.1	5.1
TP9202	2.8	2.8
TP9203	2.8	2.8


TO MAIN P4203
PIN-14 AUDIO R CH 14
PIN-15 GND 15
PIN-16 AUDIO L CH 16
PIN-17 GND 17
PIN-18 BASE CONTROL 18
PIN-19 TREBLE CONTROL 19
PIN-20 AUDIO MUTE (H) 20
PIN-21 UNSW +14V 21
TO MAIN P4204
PIN-22 AUDIO AMP MUTE (H 22
PIN-23 TV VOLUME CONTROL 23
PIN-24 24
PIN-25 25
PIN-26 NORMAL AUDIO 26
PIN-27 GND 27
PIN-28 NORMAL AUDIO 28
PIN-29 DC +17V 29
Q4304 UN2113 (SWITCHING MUTE-ON)
Q4305 2SD601 (SWITCHING MUTE-ON)
Q4306 2SB709(R,S) (POWER ON/OFF MUTING)
Q4301 UN2115 (AUDIO MUTE)
Q4302 XN4215 (AUDIO MUTE)
Q4201 UN2215 (AUDIO MUTE)
Q4202 UN2215 (AUDIO MUTE)
Q4203 UN2115 (AUDIO MUTE)
Q4503 XN4312 /IMD2 (AUDIO MUTE)
IC4201 AN3962FB-V (Hi-Fi AUDIO PROCESS)
IC4501 AN7395S (SPATIALIZER)
D4201
D4302
D4303
D4304
D4305
D4306
D4501 MA4091-M (9.1V)
TP4201
TP4202
TP4902
J4201
J4202
J4301
R4214 33K
R4216 15K
R4218 1K
R4217 1K
R4222 100
R4221 100
R4246 27K
R4247 10K
R4248 1K
R4312 12K
R4320 22K
R4321 22K
R4323 12K
R4324 120K
R4325 1K
R4326 120K
R4503 47K
R4504 47K
R4501 22K
R4502 22K
R4505 150K
R4509 6800
R4510 1500
R4513 22K
R4514 10K
R4515 180 1/4W
R4519 33K
R4520 1M
C4218 1/50V
C4247 1/50V
C4239 1/50V
C4237 10/16V
C4236 47/6.3V
C4245 0.1
C4951 47/16V
C4315 1/50V
C4316 2.2/50V
C4318 100/16V
C4314 1/50V
C4307 1/50V
C4220 10/16V
C4219 10/16V
C4235 100/6.3V
C4217 1/50V
C4215 15K
C4213 33K
C4221 10/16V
C4501 10/16V
C4502 10/16V
C4513 100/6.3V
C4503 10/16V
C4504 10/16V
C4506 0.056
C4505 0.039
C4507 10/16V
C4508 0.01
C4509 0.027
C4510 10/16V
C4511 2.2/50V
C4512 22/10V
C4516 1/50V
C4517 100/16V
C4518 0.1
C4519 1/50V
C4520 0.1
AUDIO L CH IN
1/2 VCC
AUDIO L CH OUT
AUDIO R CH OUT
SET
R CH RETURN
GND
L CH RETURN
TIMING
AUDIO R CH IN
FILTER
V. REG OUT
FILTER
SPATIALIZER CTL
SPATIALIZER CONTROL(H/L/OFF)
VCC
TIMING
TUNER
LINE1
AMP
RF AGC DETECTOR
RF AGC
MUTE
V-REF
+12V
WF69
WF71
WF72
WF75
WF76
WF77



4	2.6	2.6
5	---	---
6	5.1	5.1
7	2.6	2.6
8	2.6	2.6
9	0	0
10	2.6	2.6
11	2.6	2.6
12	2.6	2.6
13	2.6	2.6
14	---	---
15	2.6	2.6
16	4.2	4.2
17	4.0	4.0
18	0	0
19	2.6	2.6
20	2.6	2.6
21	0	0
22	0	0
23	0	0
24	---	---
25	0	0
26	2.6	2.6
27	2.6	2.6
28	0	0
29	1.6	1.6
30	2.7	2.7
31	0.1	0.1
32	---	---
33	2.6	0
34	2.6	2.6
35	2.6	2.6
36	---	---
37	2.6	2.6
38	2.6	2.6
39	11.3	11.3
40	0.5	0.5
41	6.2	6.2
42	0	0
43	0	0
44	0	0
45	6.2	6.2
46	6.2	6.2
47	---	---
48	---	---
IC4301		
1	6.1	6.1
2	0	0
3	---	---
4	0	0
5	6.2	6.2
6	6.3	6.3
7	2.6	2.6
8	2.6	2.6
9	6.1	6.1
10	---	---
11	2.6	2.6
12	2.6	2.6
13	6.1	6.1
14	6.1	6.1

19	---	---
20	---	---
21	12.0	12.0
22	6.1	6.1
IC4501		
1	0	0
2	4.8	4.8
3	4.8	4.8
4	---	---
5	4.8	4.8
6	4.8	4.8
7	4.8	4.8
8	0	0
9	4.8	4.8
10	0.8	0.8
11	0.5	0.5
12	9.2	9.2
13	2.2	1.1
14	0	0
15	---	---
16	4.8	4.8
17	5.1	5.1
18	8.4	8.4
19	4.8	4.8
20	0	0
IC4951		
1	0	0
2	0	0
3	0	0
4	0	0
5	12.1	12.1
6	5.1	5.1
7	5.1	5.1
8	5.1	5.1
9	4.5	4.5
10	0	0
11	4.5	4.5
12	---	---
IC9201		
1	3.1	3.1
2	3.7	3.7
3	5.1	5.1
4	4.2	4.2
5	0	0
6	5.1	5.1
7	4.5	4.5
8	2.8	2.8
9	2.8	2.8
Q4204		
E	2.7	2.7
B	2.6	2.6
C	5.1	5.1
Q4306		
E	12.1	12.1
C	-5.2	-5.2
B	11.7	11.7

TP4201	0	0
TP4202	0	0
TP4203	0	0
TP4204	0	0
TP4205	2.7	2.7
TP4206	2.7	2.7
TP4207	0	0
TP4901	4.5	4.5
TP4902	4.5	4.5
TP4903	0	0
TP9201	5.1	5.1
TP9202	2.8	2.8
TP9203	2.8	2.8

UNLESS OTHERWISE SPECIFIED:
DIODES IS MA165 AND
WATTAGE OF RESISTORS IS 1/10W.

VJBS4024

H I J K L M N O P

TV STEREO SCHEMATIC DIAGRAM (A)

REC AUDIO SIGNAL ⇦ PB AUDIO SIGNAL ⇦

IC4901 VCRS0214 (MTS/SAP AUDIO PROCESS)

PHASE DETECTOR, VCO, 1/4, 1/2, SAP DEMODU, SAP DETECTOR, SAP BPF, PILOT DETECTOR, PILOT CANCEL, L-R DEMODU, L-R LPF, NOISE DETECTOR, BPF, LPF, AMP, MTS LED DRIVE, SAP LED DRIVE, L+R LPF, 70uS DE-EMPHASIS, MTS, SAP, MODE SELECTOR, MATRIX, dBX NOISE REDUCTION

GND 1 | 2 | 3 | 4 WF65 | 5 VDD | 6 | 7 | 8 | 9 L CH | 10 GND | 11 R CH | 12

TP4903 WF67 TP4901 WF66 TP4902

C4901 47/16V

J4901 R4901 10KB SEPARATION ADJ J4902 Z J4903 R4902 10K Z

TO MAIN P4201

PIN-1	AUDIO -5.6V	1
PIN-2	FM MONO (L)	2
PIN-3	FM STEREO (L)	3
PIN-4	TUNER AUDIO	4
PIN-5	AUDIO DEFEAT (H)	5
PIN-6	MAIN(H)/SAP(L)	6
PIN-7	STEREO(H)/MONO(L)	7
PIN-8	MTS SIGNAL (L)	8

TO MAIN P4202

PIN-9	SAP SIGNAL (L)	9
PIN-10	GND	10
PIN-11		11
PIN-12	UNSW +5V (VIDEO)	12
PIN-13	SW +12V	13

R4904 0 R4903 22K Z Q4901 UN1212 (INVERTER) Z

TO MAIN P4203

PIN-14		14
PIN-15	GND	15
PIN-16		16
PIN-17	GND	17
PIN-18		18
PIN-19		19
PIN-20	AUDIO MUTE (H)	20
PIN-21	UNSW +14V	21

TO MAIN P4204

PIN-22	AUDIO AMP MUTE (H)	22
PIN-23	TV VOLUME CONTROL	23
PIN-24	TUNER SIGNAL (L)	24
PIN-25	FM (L)	25
PIN-26	NORMAL AUDIO	26
PIN-27	GND	27
PIN-28	NORMAL AUDIO	28
PIN-29	DC +17V	29

D4302 D4305 C4318 100/16V R4324 120K R4326 120K R4325 1K C4316 2.2/50V Q4306 2SA733 (T.P) (POWER ON/OFF MUTING) D4306

Z Q4304 DTA144ES (SWITCHING MUTE-ON) R4314 56K C4307 1/50V D4303 MA165 Q4305 2SC945A (SWITCHING MUTE-ON) R4305 150K R4315 150K D4304

IC9201 AN7420 (FM SIGNAL PROCESS)

FLIP FLOP 19KHz ∠90° | FLIP FLOP 19KHz ∠0° | STEREO DETECTOR | MONO/STEREO SELECTOR | PHASE DETECTOR | FLIP FLOP 38KHz | AMP | DC AMP | VCO | STEREO LED DRIVE | STEREO SIGNAL DEMODULATOR

1 | 2 VCC | 3 | 4 GND | 5 | 6 | 7 L-CH | 8 R-CH | 9

J9203 5600 1/4W J9204 J9205 R9211 4700 Z R9210 10K FM INPUT LEVEL TP9201

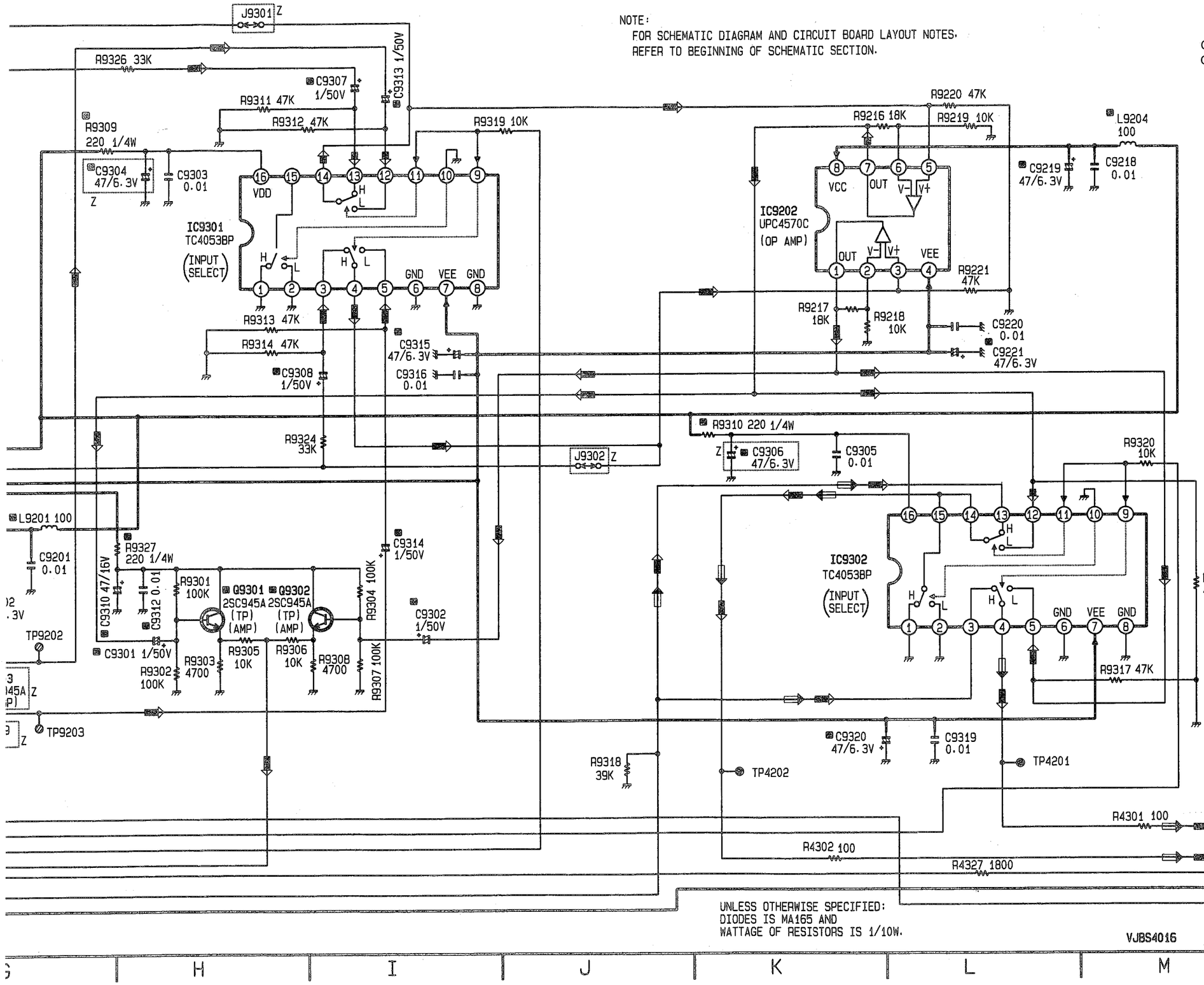
C9203 10/16V C9205 1/50V R9201 1K C9206 3.3/50V C9204 1000P R9206 100KB R9202 10K FM VCO R9203 1K R9204 220K C9207 1/50V R9205 3300 C9208 0.022 Q9201 DTA144ES (SWITCHING FM MONO ON-ON)

L9201 100 C9201 0.01 C9202 47/6.3V TP9202 J9201 R9208 1K Z Q9203 2SC945A (AMP) Z J9202 R9209 1K Z TP9203 R9207 3300 C9209 0.022 Z Q9202 2SC945A (AMP)

J9301 Z R9326 33K R9309 220 1/4W R9311 4 C9304 47/6.3V Z C9303 0.01 IC9301 TC4053BP (INPUT SELECT) 15 VDD H 1 R9313 R9314

R9327 220 1/4W C9310 47/16V C9312 0.01 R9301 100K Q9301 2SC945A (TP) 2SC945A (AMP) C9301 1/50V R9302 100K R9303 4700 R9305 10K

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



P4301		TO STEREO AMP
1	GND	P4601-1
2	AUDIO L CH	P4601-2
3	GND	P4601-3
4	AUDIO R CH	P4601-4
5	AUDIO AMP MUTE(H)	P4601-5
6	DC +17V	P4601-6
7	TV VOLUME CONTROL	P4601-7

UNLESS OTHERWISE SPECIFIED:
DIODES IS MA165 AND
WATTAGE OF RESISTORS IS 1/10W.

VJBS4016

COMPARISON CHART OF MODELS & MARKS

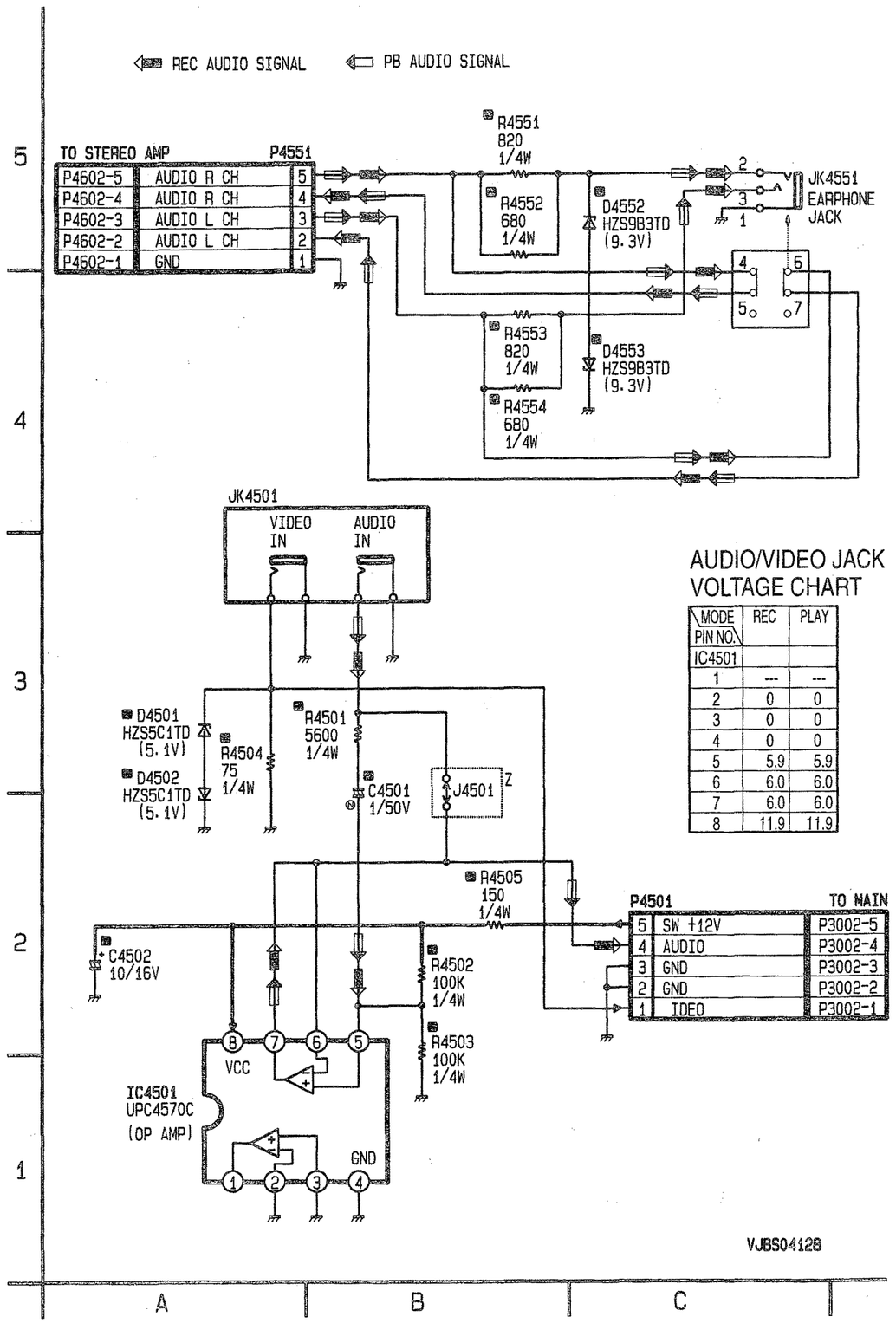
MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

TV STEREO VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC4901		
1	0	0
2	0	0
3	0	0
4	0	0
5	12.1	12.1
6	5.1	5.1
7	5.1	5.1
8	5.1	5.1
9	4.5	4.5
10	0	0
11	4.5	4.5
12	---	---
IC9201		
1	3.1	3.1
2	3.7	3.7
3	5.1	5.1
4	4.2	4.2
5	0	0
6	5.1	5.1
7	4.5	4.5
8	2.8	2.8
9	2.8	2.8
IC9202		
1	0	0
2	0	0
3	0	0
4	-5.7	-5.7
5	0	0
6	0	0
7	0	0
8	5.1	5.1
IC9301		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	-5.7	-5.7
8	0	0
9	4.3	4.3
10	0	0
11	4.3	4.3
12	0	0
13	0.2	0.2
14	0.2	0.2
15	---	---
16	5.1	5.1

MODE / PIN NO.	REC	PLAY
IC9302		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	-5.7	-5.7
8	0	0
9	5.0	5.0
10	0	0
11	5.0	5.0
12	0	0
13	0	0
14	0	0
15	---	---
16	5.1	5.1
Q4306		
E	12.1	12.1
C	-5.2	-5.2
B	11.7	11.7
Q9201		
E	5.1	5.1
C	4.4	4.4
B	5.1	5.1
Q9301		
E	4.9	4.9
C	11.6	11.6
B	5.6	5.6
Q9302		
E	4.9	4.9
C	11.6	11.6
B	5.5	5.5
TP4201	0	0
TP4202	0	0
TP4901	4.5	4.5
TP4902	4.5	4.5
TP4903	0	0
TP9201	5.1	5.1
TP9202	2.8	2.8
TP9203	2.8	2.8

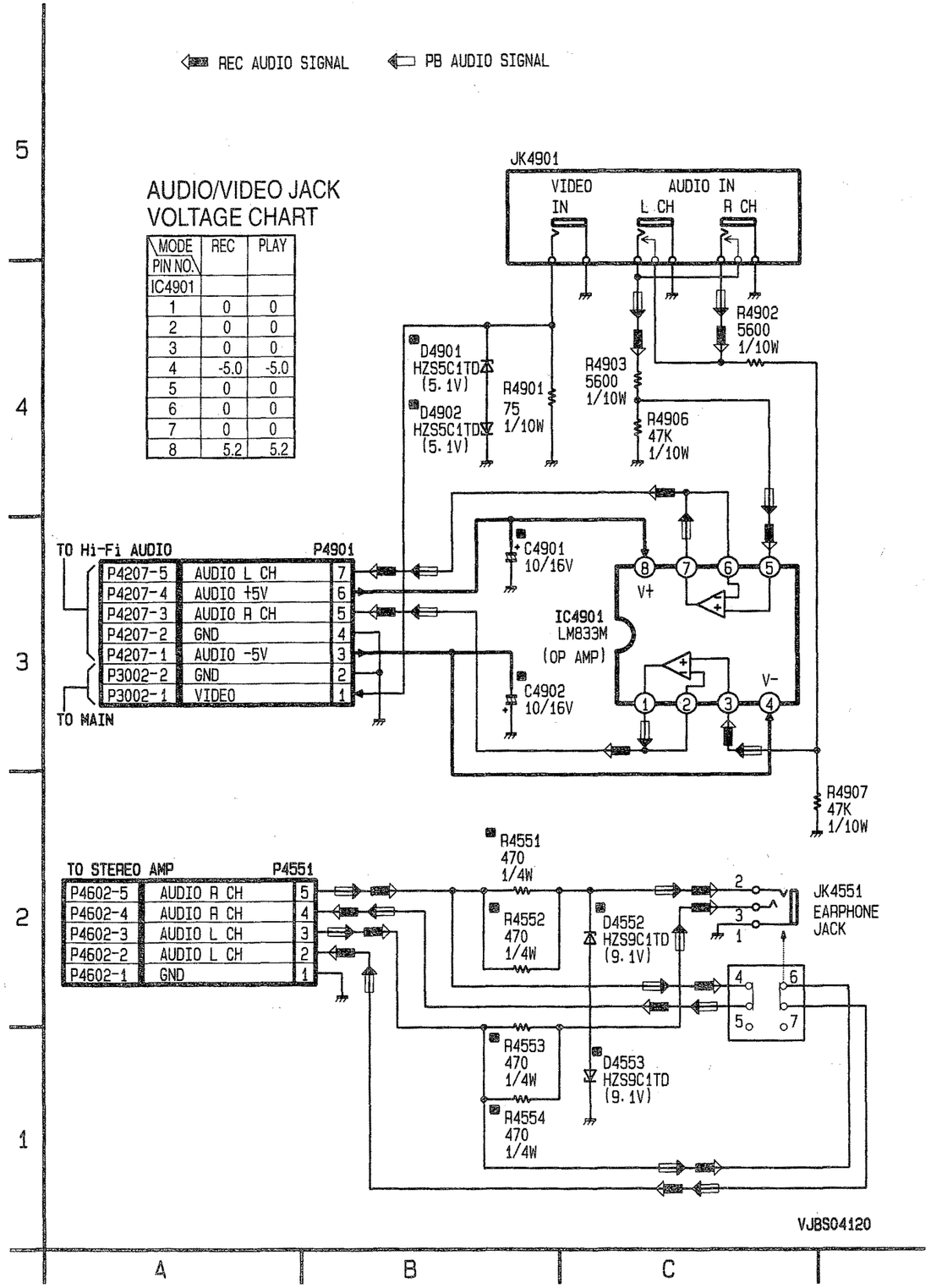
AUDIO/VIDEO JACK SCHEMATIC DIAGRAM (A)



AUDIO/VIDEO JACK VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC4501		
1	---	---
2	0	0
3	0	0
4	0	0
5	5.9	5.9
6	6.0	6.0
7	6.0	6.0
8	11.9	11.9

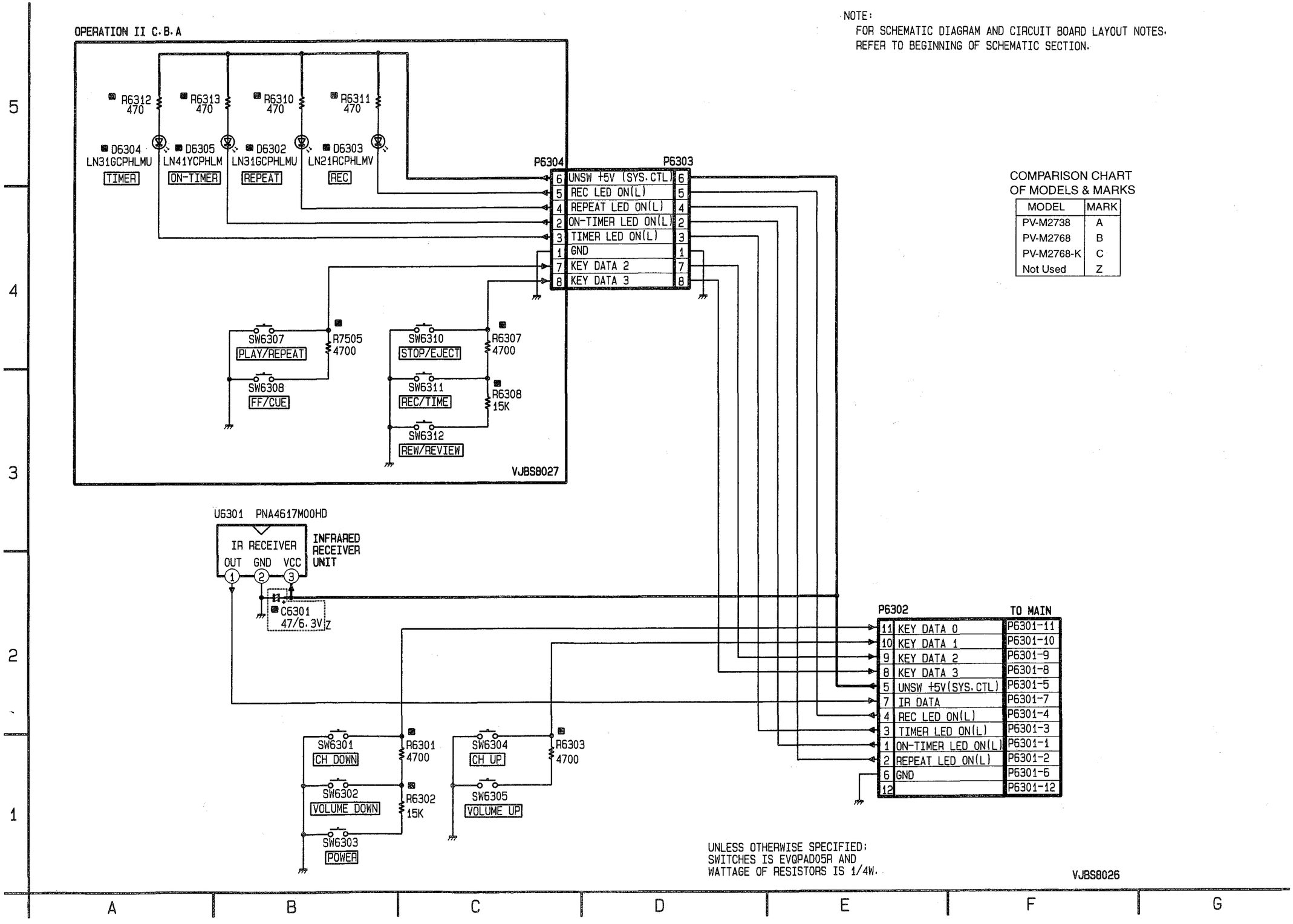
AUDIO/VIDEO JACK SCHEMATIC DIAGRAM (B,C)



AUDIO/VIDEO JACK VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC4901		
1	0	0
2	0	0
3	0	0
4	-5.0	-5.0
5	0	0
6	0	0
7	0	0
8	5.2	5.2

OPERATION I/II SCHEMATIC DIAGRAM

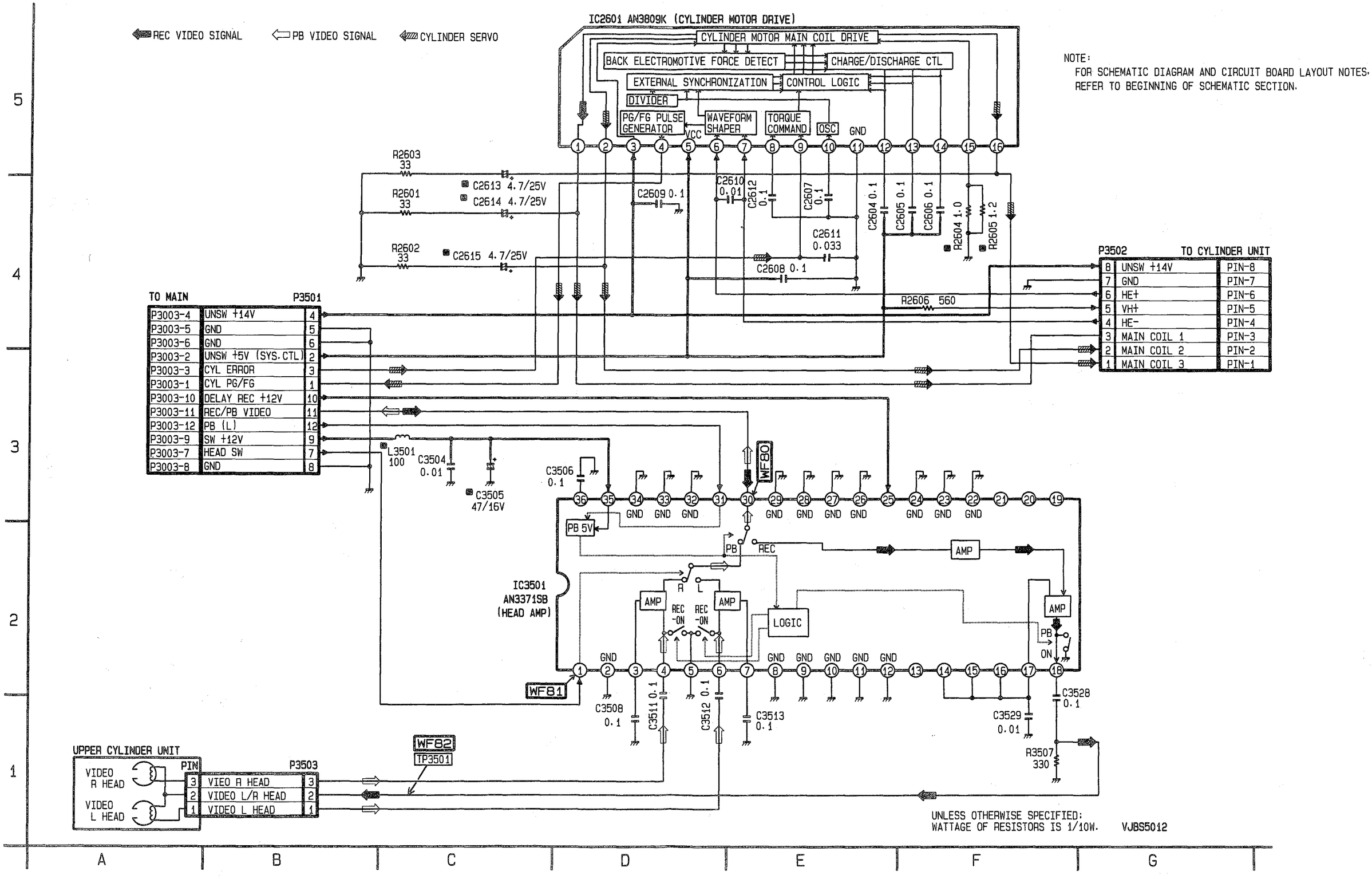


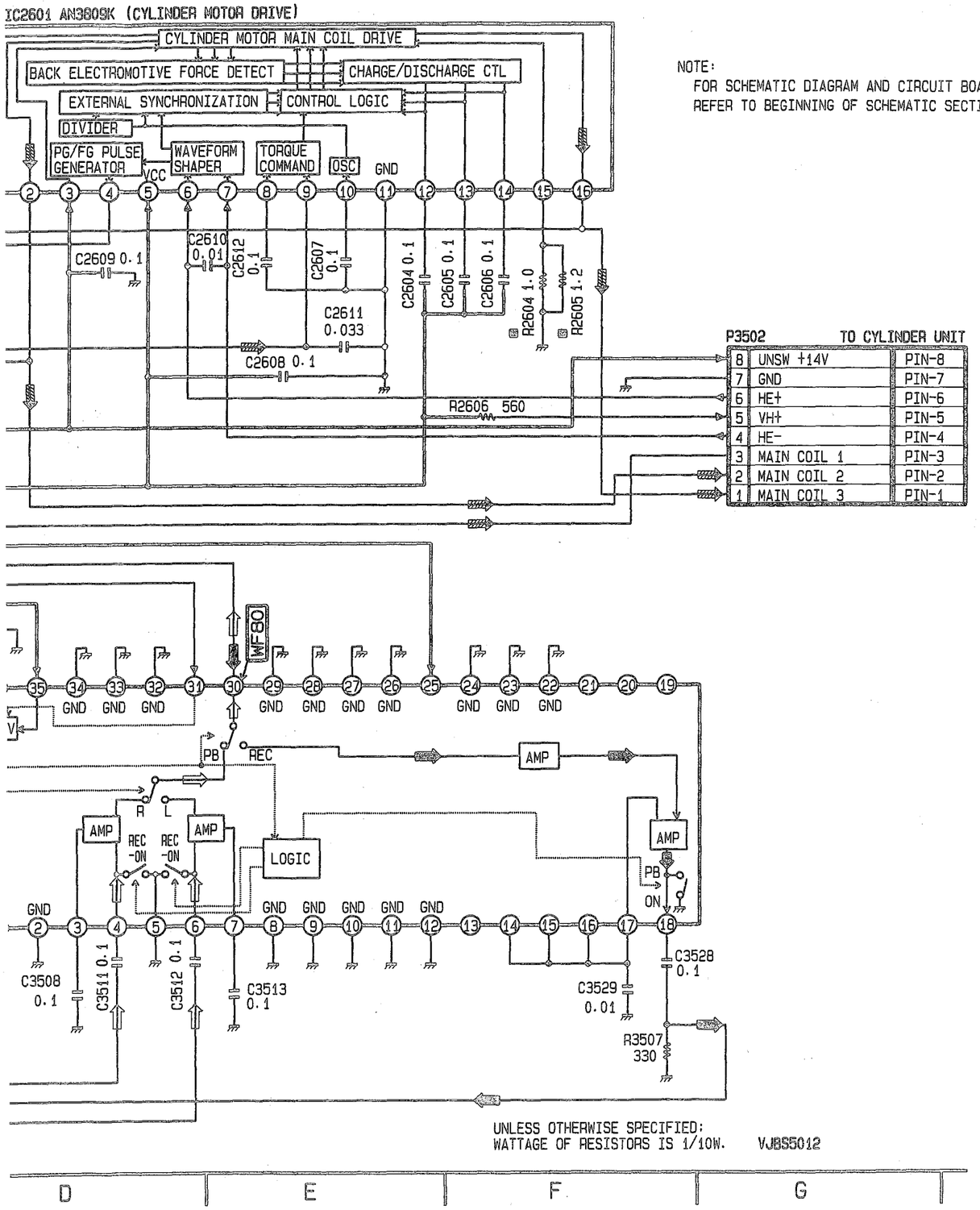
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

HEAD AMP SCHEMATIC DIAGRAM (A)





NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W. VJBS5012

D E F G

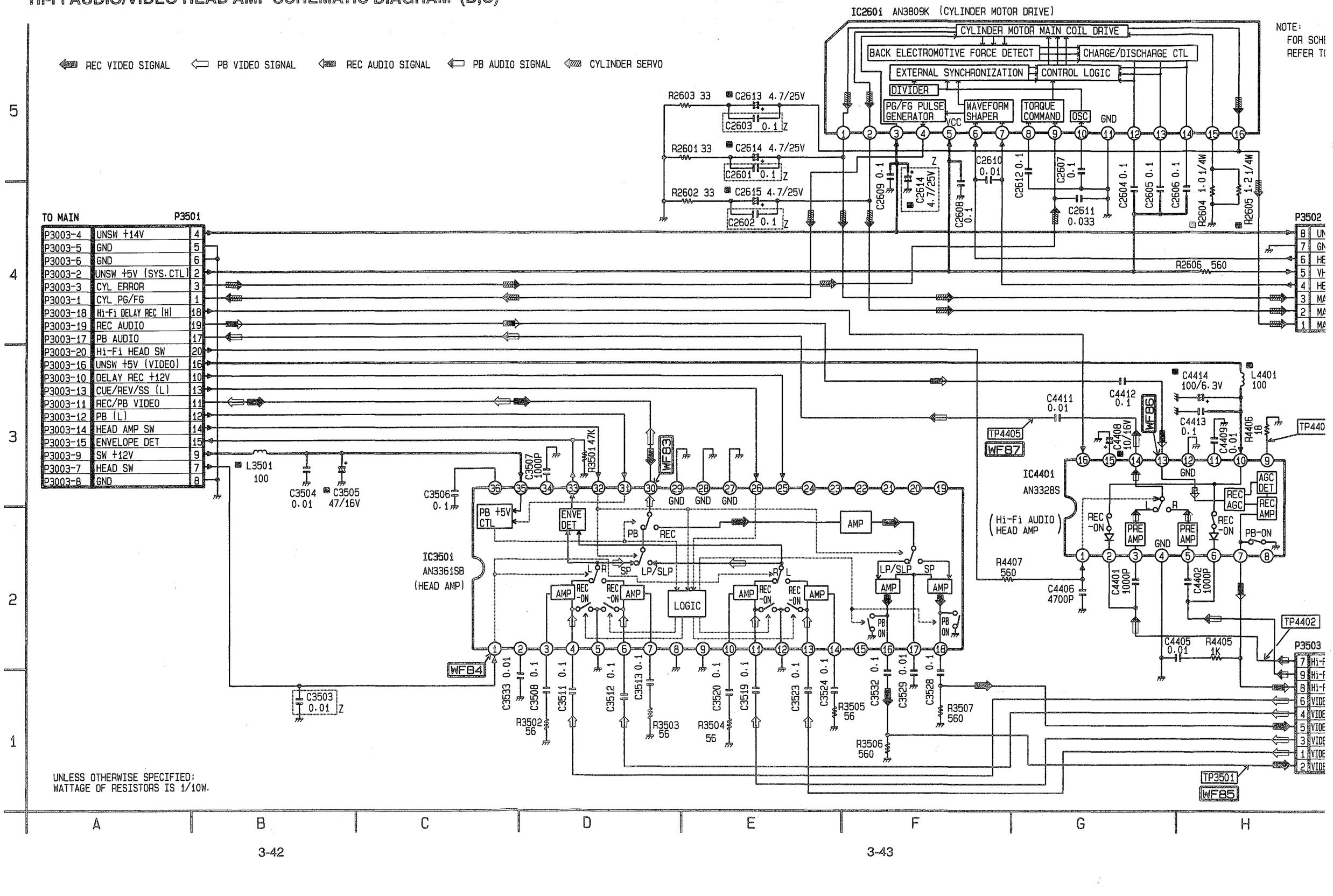
HEAD AMP VOLTAGE CHART

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
IC2601					
1	13.0	13.0	13.0	13.0	13.0
2	13.0	13.0	13.0	13.0	13.0
3	13.5	13.5	13.5	13.5	13.5
4	1.2	1.2	1.2	1.2	1.2
5	5.1	5.1	5.1	5.1	5.1
6	0.9	0.9	0.9	0.9	0.9
7	1.0	1.0	1.0	1.0	1.0
8	0.7	0.7	0.7	0.7	0.7
9	2.6	2.6	2.6	2.6	2.6
10	1.5	1.5	1.5	1.5	1.5
11	0	0	0	0	0
12	3.9	3.9	3.9	3.9	3.9
13	3.9	3.9	3.9	3.9	3.9
14	3.9	3.9	3.9	3.9	3.9
15	0.1	0.1	0.1	0.1	0.1
16	13.2	13.2	13.2	13.2	13.2
IC3501					
1	2.6	2.6	2.6	2.6	2.6
2	0	0	0	0	0
3	0.3	0.3	1.4	0.3	0.3
4	0	0	0.7	0	0
5	0	0	0	0	0
6	0	0	0.7	0	0
7	0.2	0.2	1.4	0.2	0.2
8	0	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0
11	0	0	0	0	0
12	0	0	0	0	0
13	---	---	---	---	---
14	0.2	0.2	2.2	0.2	0.2
15	---	---	---	---	---
16	0	6.3	0	0	0
17	0	6.3	0	0	0
18	0	6.3	0	0	0
19	---	---	---	---	---
20	---	---	---	---	---
21	---	---	---	---	---
22	0	0	0	0	0
23	0	0	0	0	0
24	0	0	0	0	0
25	0.5	11.9	0.5	0.5	0.5
26	0	0	0	0	0
27	0	0	0	0	0
28	0	0	0	0	0
29	0	0	0	0	0
30	2.7	2.7	2.3	2.7	2.7
31	5.1	5.1	0.1	5.1	5.1
32	0	0	0	0	0
33	0	0	0	0	0
34	0	0	0	0	0
35	12.0	12.0	12.0	12.0	12.0
36	0.1	0.1	5.0	0.1	0.1
TP3501	0	0	0	0	0

COMPARISON CHART OF MODELS & MARKS

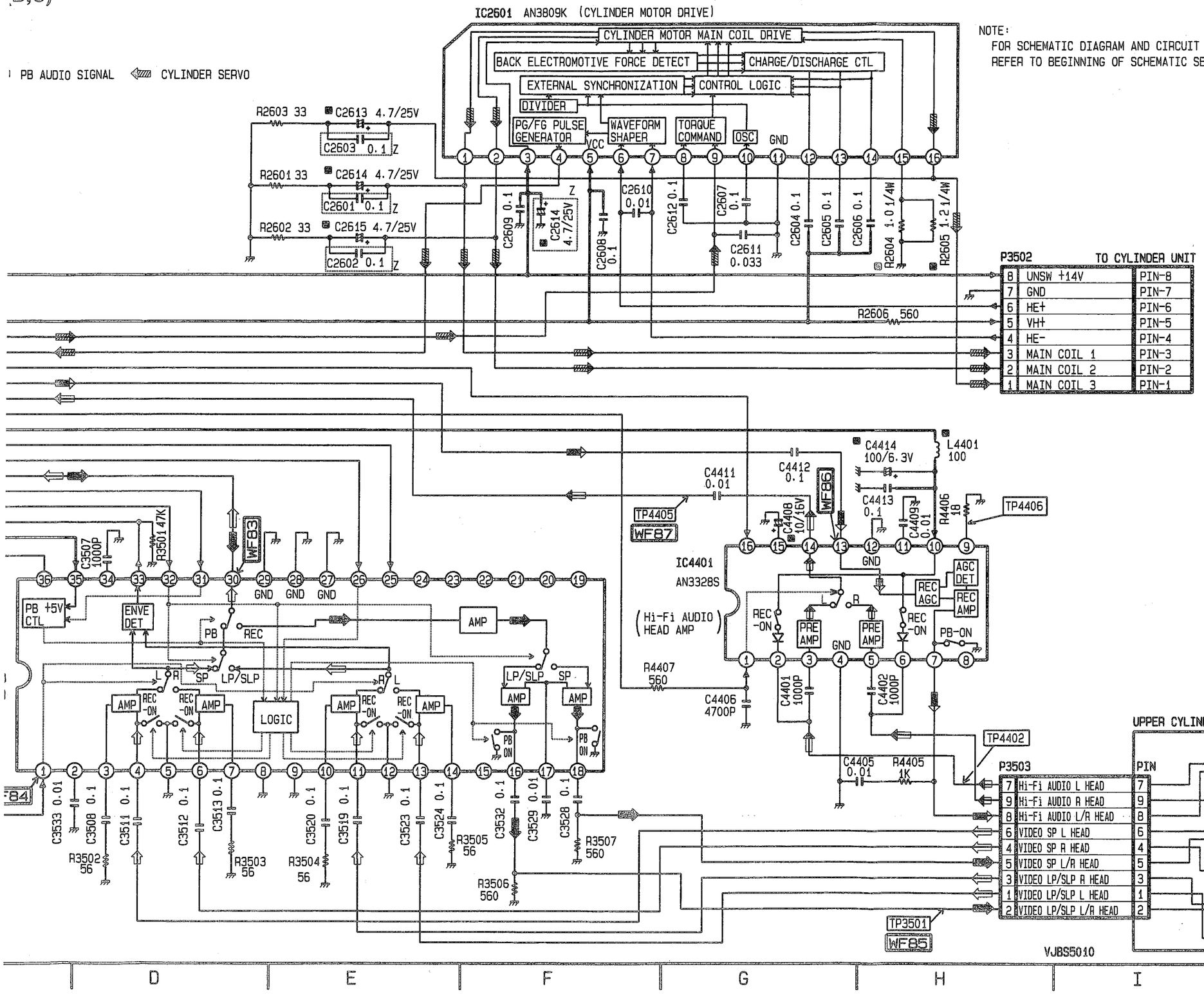
MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

Hi-Fi AUDIO/VIDEO HEAD AMP SCHEMATIC DIAGRAM (B,C)



(B,C)

PB AUDIO SIGNAL CYLINDER SERVO



NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Hi-Fi AUDIO/VIDEO HEAD AMP VOLTAGE CHART

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
IC2601					
1	13.0	13.0	13.0	13.0	13.0
2	13.0	13.0	13.0	13.0	13.0
3	13.5	13.5	13.5	13.5	13.5
4	1.2	1.2	1.2	1.2	1.2
5	5.1	5.1	5.1	5.1	5.1
6	0.9	0.9	0.9	0.9	0.9
7	1.0	1.0	1.0	1.0	1.0
8	0.7	0.7	0.7	0.7	0.7
9	2.6	2.6	2.6	2.6	2.6
10	1.5	1.5	1.5	1.5	1.5
11	0	0	0	0	0
12	3.9	3.9	3.9	3.9	3.9
13	3.9	3.9	3.9	3.9	3.9
14	3.9	3.9	3.9	3.9	3.9
15	0.1	0.1	0.1	0.1	0.1
16	13.2	13.2	13.2	13.2	13.2
IC3501					
1	2.6	2.6	2.6	2.6	2.6
2	0	0	4.2	0	0
3	0.3	0.3	1.4	0.3	0.3
4	0	0	0.7	0	0
5	0	0	0	0	0
6	0	0	0.7	0	0
7	0.2	0.2	1.4	0.2	0.2
8	0	0	0	0	0
9	0	0	0	0	0
10	0.2	0.2	2.2	0.2	0.2
11	0	0	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0.2	0.2	2.2	0.2	0.2
15	---	---	---	---	---
16	0	6.3	0	0	0
17	0	6.3	0	0	0
18	0	6.3	0	0	0
19	---	---	---	---	---
20	---	---	---	---	---

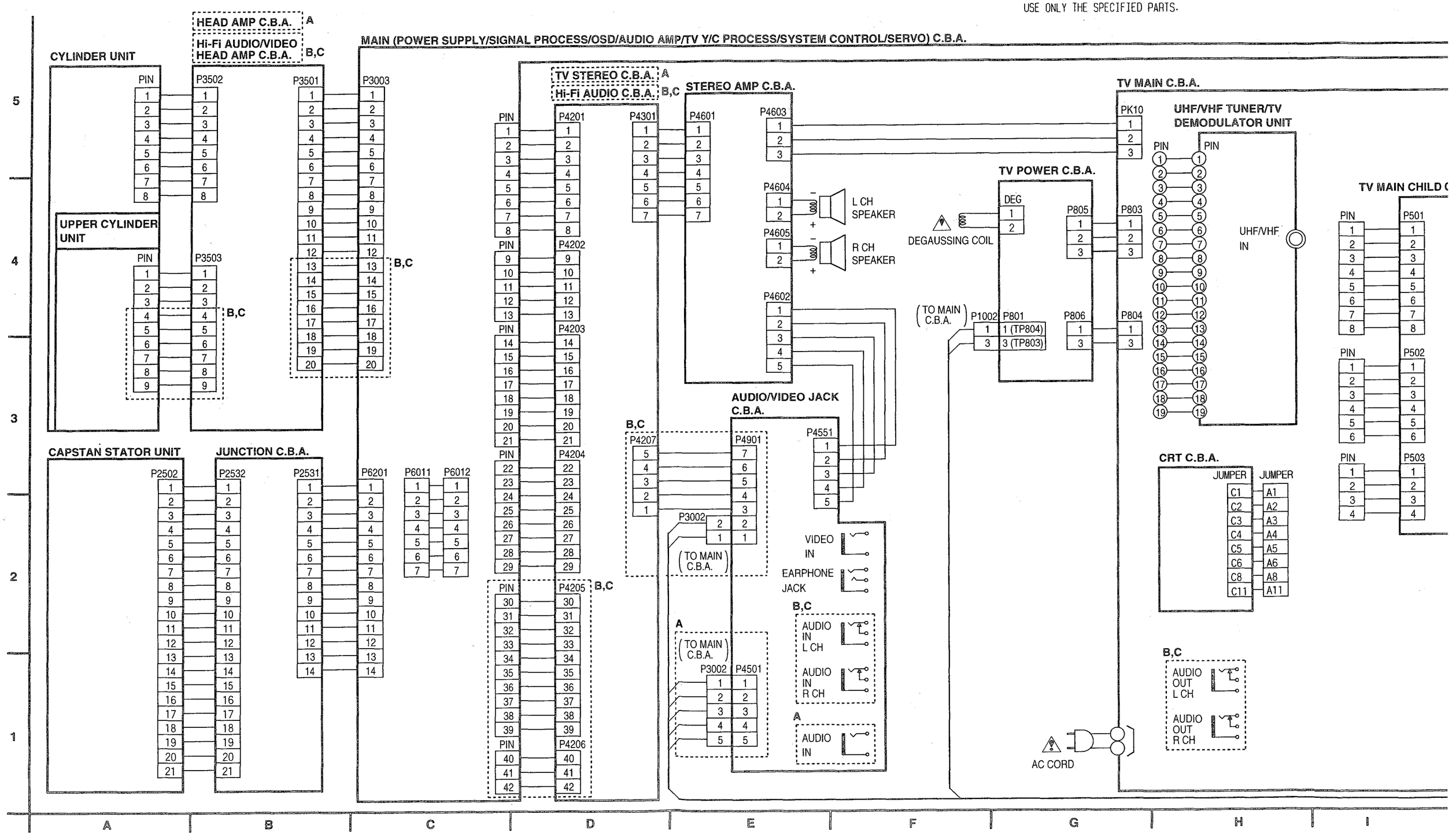
MODE / PIN NO.	STOP	REC	PLAY	FF	REW
21	---	---	---	---	---
22	---	---	---	---	---
23	---	---	---	---	---
24	---	---	---	---	---
25	0.5	11.9	0.5	0.5	0.5
26	5.0	5.0	5.0	5.0	5.0
27	0	0	0	0	0
28	0	0	0	0	0
29	0	0	0	0	0
30	2.7	2.7	2.3	2.7	2.7
31	5.1	5.1	0.1	5.1	5.1
32	0.1	0.1	0.1	0.1	0.1
33	0	0	0	0.2	0.2
34	0.1	0.1	0.7	0.1	0.1
35	12.0	12.0	12.0	12.0	12.0
36	0.1	0.1	5.0	0.1	0.1
IC4401					
1	2.6	0	2.6	2.6	2.6
2	0	4.0	0	0	0
3	0	0.6	0	0	0
4	0	0	0	0	0
5	0.7	0.6	0	0	0
6	0	4.0	0	0	0
7	1.0	1.0	1.0	1.0	1.0
8	---	---	---	---	---
9	2.6	2.6	2.6	2.6	2.6
10	1.5	1.5	1.5	1.5	1.5
11	0	0	0	0	0
12	0	0	0	0	0
13	3.9	3.9	3.9	3.9	3.9
14	3.9	3.9	3.9	3.9	3.9
15	0.1	0.1	0.1	0.1	0.1
16	13.0	13.0	13.0	13.0	13.0
TP3501	0	0	0	0	0
TP4402	0	4.0	4.0	0	0
TP4405	0	0	0	0	0
TP4406	2.6	2.6	2.6	2.6	2.6

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

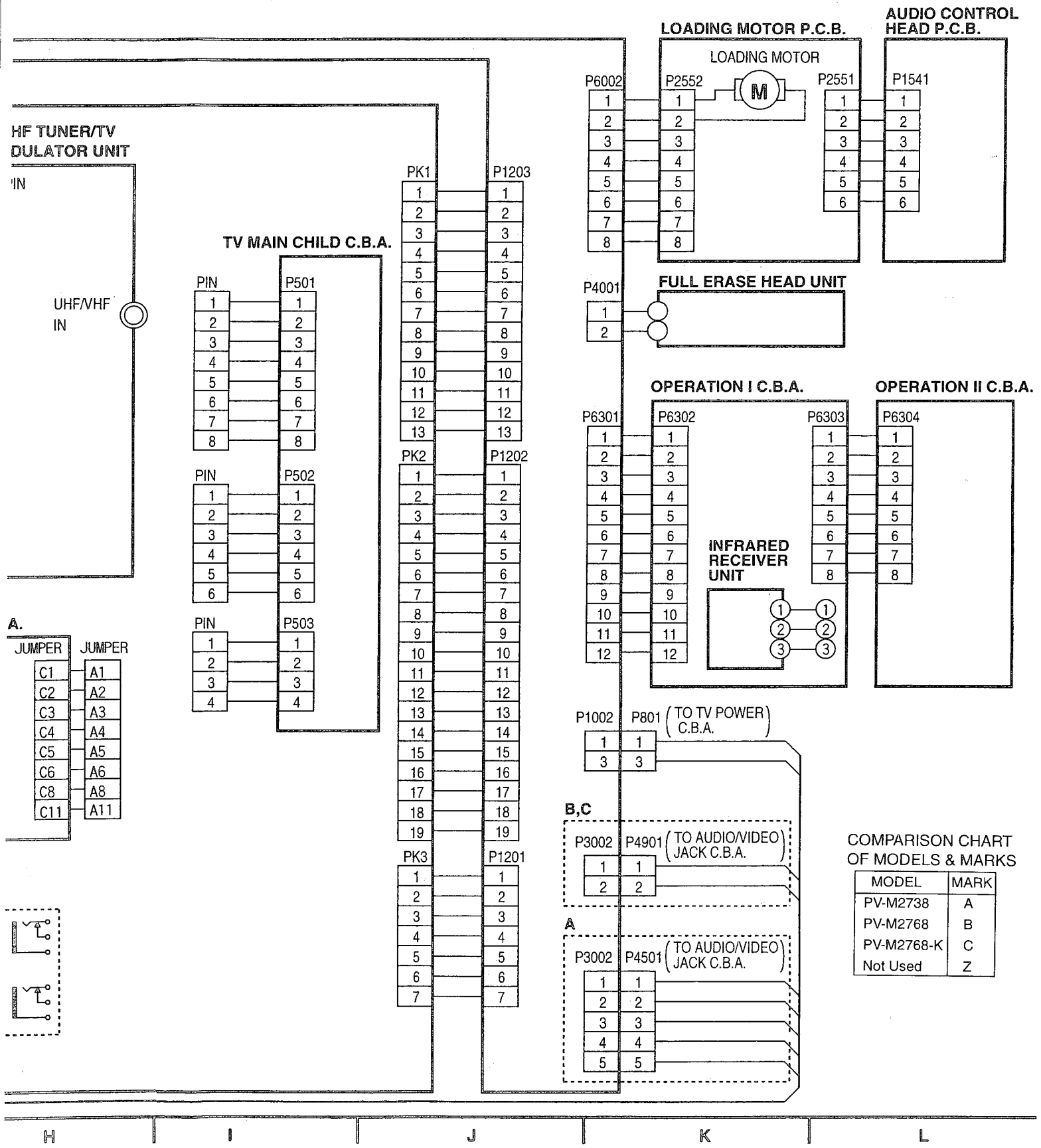
INTERCONNECTION SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS.
USE ONLY THE SPECIFIED PARTS.



⚠ HAVE
FOR SAFETY.
ENTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



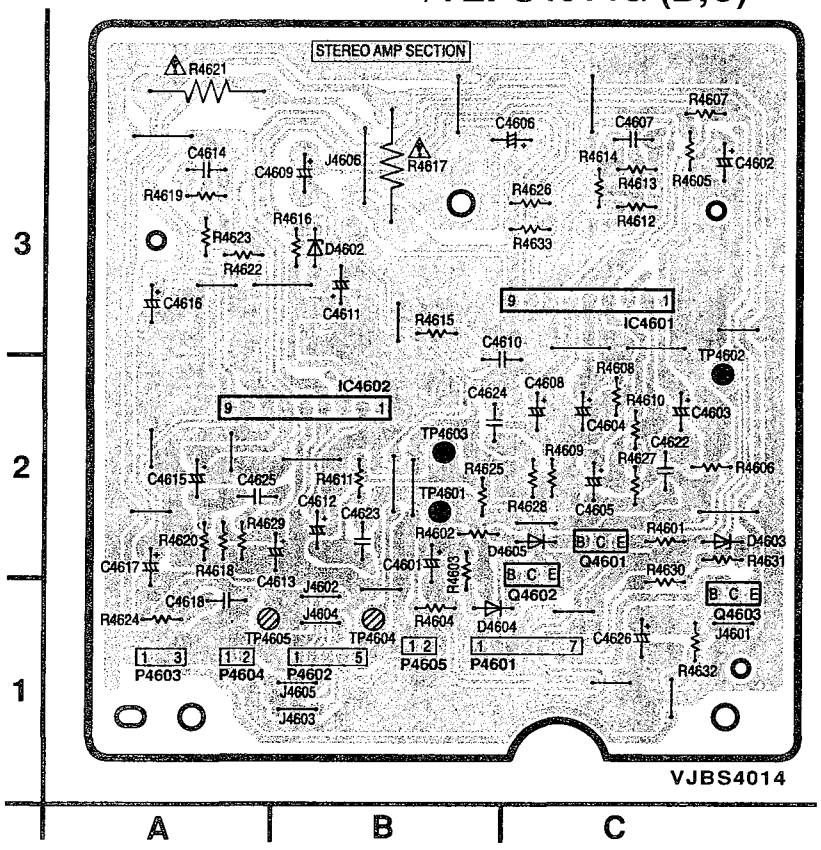
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

H I J K L

CIRCUIT BOARD LAYOUT

STEREO AMP C B A. VEPS4014F (A) /VEPS4014G (B,C)



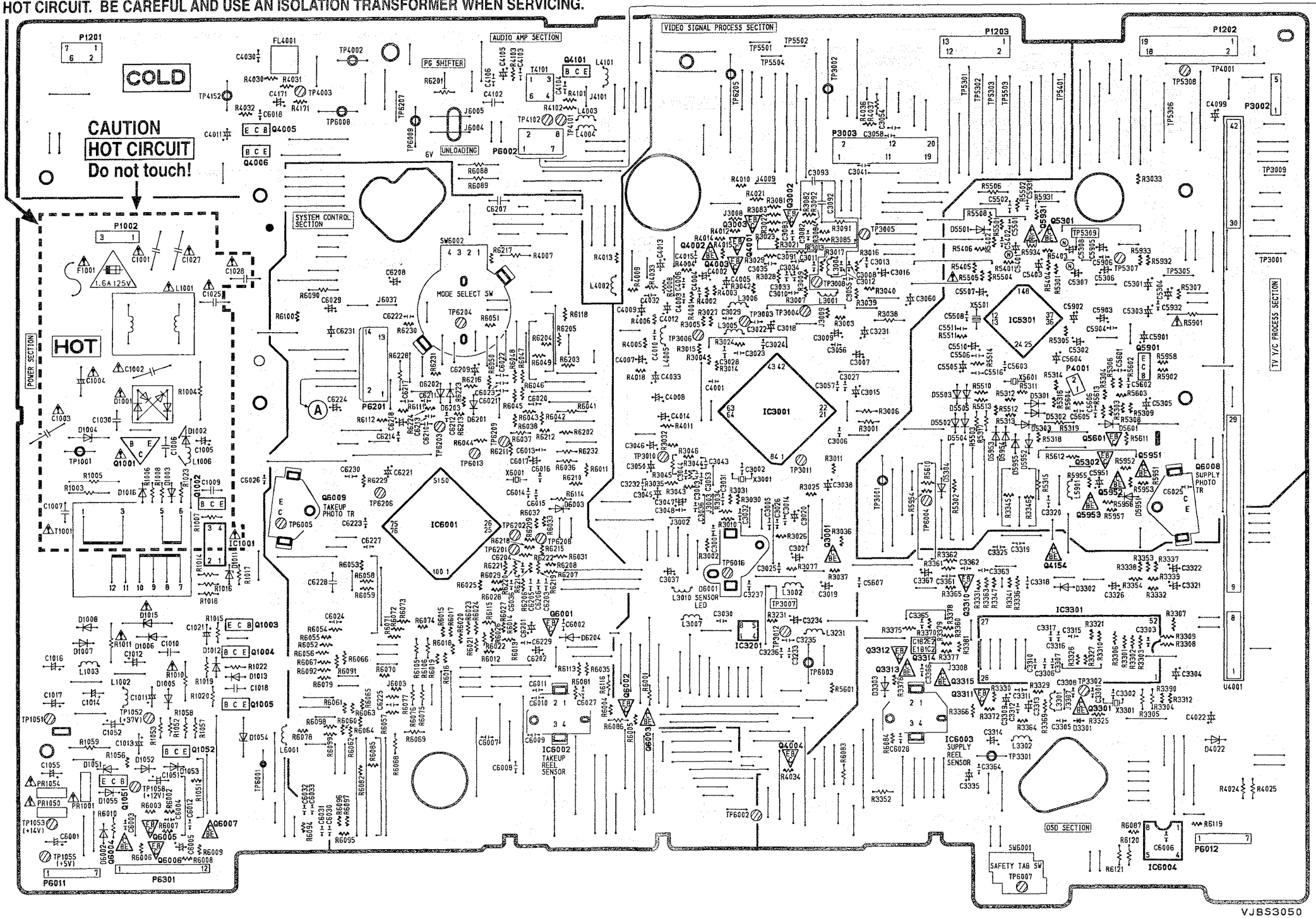
STEREO AMP	
TRANSISTOR	
Q4601	C-2
Q4602	C-1
Q4603	C-1
IC	
IC4601	C-3
IC4602	B-2
CONNECTOR	
P4601	B-1
P4602	B-1
P4603	A-1
P4604	A-1
P4605	B-1
TEST POINT	
TP4601	B-2
TP4602	C-3
TP4603	B-2
TP4604	B-1
TP4605	A-1

NOTE:

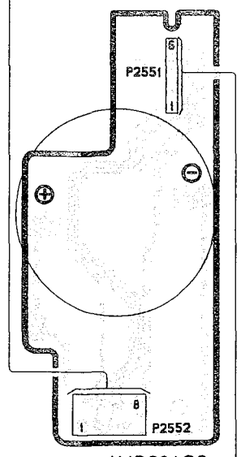
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

MAIN (POWER SUPPLY/SIGNAL PROCESS/OSD/AUDIO AMP/SYSTEM CONTROL/SERVO/TV Y/C PROCESS) C B.A VEPS3050E (A) /VEPS3050D (B,C)

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

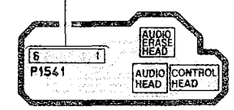


LOADING MOTOR P.C.B.



VJBS0A23

AUDIO CONTROL HEAD P.C.B.

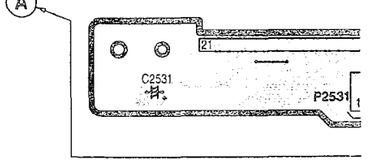


VJBS0A24

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠
SPECIAL CHARACTERISTICS IMPORTANT F
WHEN REPLACING ANY OF THESE COMPO
USE ONLY THE SPECIFIED PARTS.

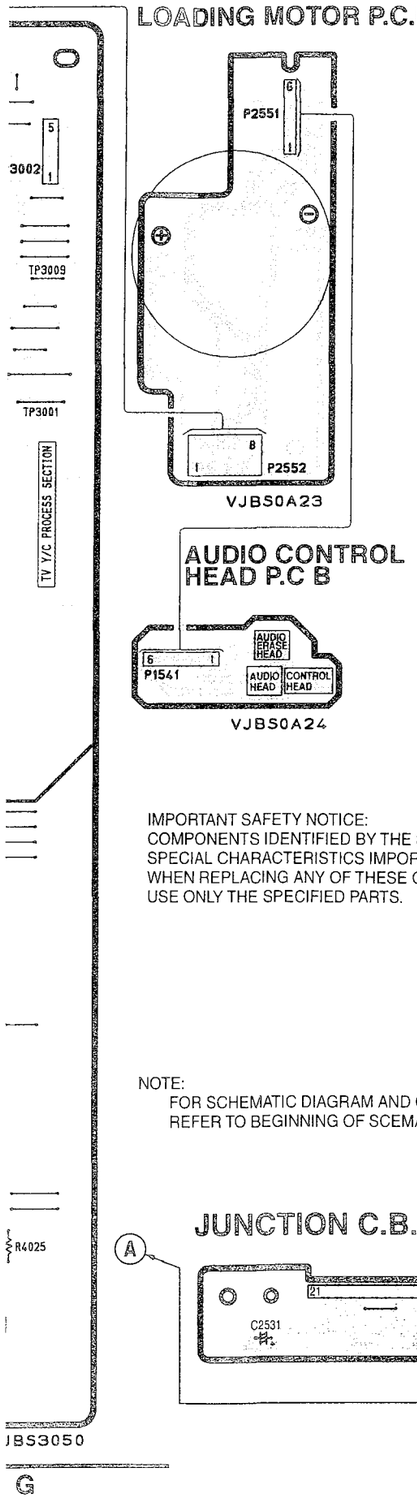
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUI
REFER TO BEGINNING OF SCEMATIC SE

JUNCTION C.B.A.



VJBS3050

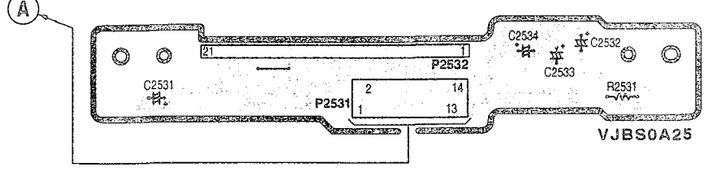
3050D (B,C)



IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

JUNCTION C.B.A. VEPS0A25A



NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

MAIN	
TRANSISTOR	
Q1001	A-3
Q1002	B-3
Q1003	B-2
Q1004	B-2
Q1005	B-2
Q1051	A-1
Q1052	B-1
Q3001	E-3
Q3002	E-4
Q3003	D-4
Q3301	F-2
Q3310	F-2
Q3311	F-2
Q3312	E-2
Q3313	E-2
Q3314	E-2
Q3315	E-2
Q4001	D-4
Q4002	D-4
Q4003	D-4
Q4004	E-1
Q4005	B-5
Q4006	B-4
Q4101	C-5
Q4154	F-3
Q5301	F-4
Q5302	F-3
Q5601	F-3
Q5901	F-4
Q5931	F-4
Q5951	F-3
Q5952	F-3
Q5953	F-3
Q6001	C-2
Q6002	D-2
Q6003	D-2
Q6004	A-1
Q6005	A-1
Q6006	A-1
Q6007	B-1
Q6008	G-3
Q6009	B-3

MAIN	
IC	
IC1001	B-2
IC3001	D-3
IC3201	D-2
IC3301	F-2
IC5301	F-4
IC6001	C-3
IC6002	C-1
IC6003	E-1
IC6004	F-1

MAIN	
ADJUSTMENT	
R6201	C-5

MAIN	
CONNECTOR	
P1002	A-4
P1201	A-5
P1202	G-5
P1203	F-5
P3002	G-5
P3003	E-5
P4001	F-4
P6002	C-5
P6011	A-1
P6012	G-1
P6201	B-3
P6301	A-1

MAIN	
TEST POINT	
TP1001	A-3
TP1051	A-2
TP1052	A-2
TP1053	A-1
TP1055	A-1
TP1058	A-1
TP3001	E-3
TP3002	E-5
TP3003	D-4
TP3004	E-4
TP3005	E-4
TP3006	D-4
TP3007	E-2
TP3008	E-4
TP3009	G-4
TP3010	D-3
TP3011	E-3
TP3012	E-2
TP3301	F-1
TP3302	F-2
TP4001	G-5
TP4002	B-5
TP4003	B-5
TP4101	C-5
TP4102	C-5
TP4152	B-5
TP5301	E-5
TP5302	F-5
TP5303	F-5
TP5306	G-5
TP5307	F-4
TP5308	G-5
TP5309	F-4
TP5401	F-5
TP5501	D-5
TP5502	E-5
TP5503	F-5
TP5504	D-5
TP6001	B-1
TP6002	D-1
TP6003	E-2
TP6004	E-3
TP6005	B-3
TP6007	F-1
TP6008	B-5
TP6009	C-5
TP6013	C-3
TP6016	D-2
TP6201	C-3
TP6202	C-3
TP6203	C-3
TP6204	C-4
TP6205	D-5
TP6206	B-3
TP6207	C-5
TP6208	C-3
TP6209	C-3

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

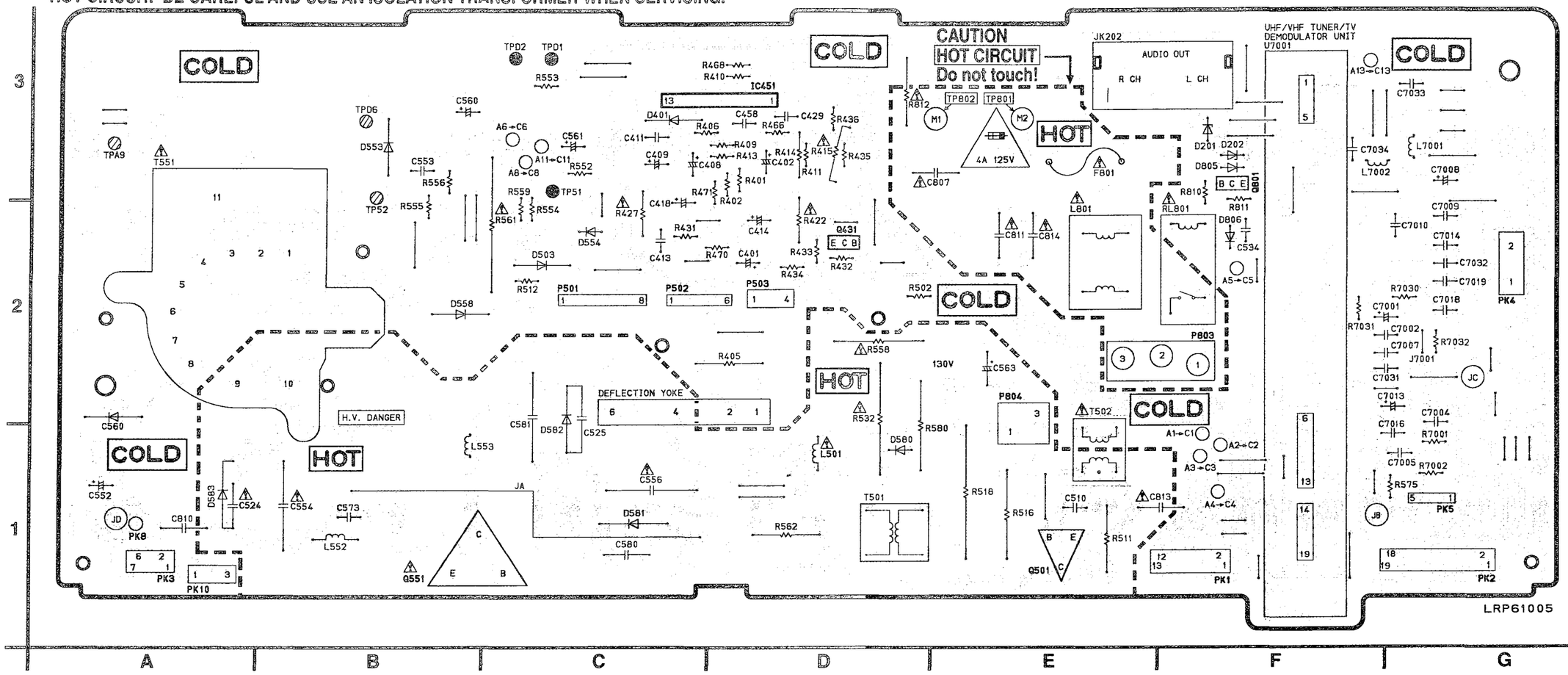
LEADLESS COMPONENT PARTS LOCATION GUIDE

MAIN C.B.A.

Q3001	E-3	R3035	D-3	R3378	E-2	R5505	E-4	R6033	C-3	R6202	D-3	C3055	E-4	C5606	F-3
Q3002	E-4	R3036	E-3	R3379	E-2	R5508	F-4	R6035	D-2	R6203	C-3	C3056	E-4	C5607	E-2
Q3003	D-4	R3037	E-2	R3380	E-2	R5510	F-3	R6038	C-3	R6204	C-4	C3057	E-3	C5904	F-4
Q3301	F-2	R3039	E-4	R3381	E-2	R5511	E-4	R6042	C-3	R6205	C-4	C3058	E-5	C5906	F-4
Q3310	E-2	R3040	E-4	R3390	G-2	R5512	F-3	R6043	C-3	R6206	C-2	C3082	E-4	C5931	F-4
Q3311	E-2	R3042	D-4	R4001	D-4	R5513	F-3	R6044	C-3	R6207	C-2	C3083	E-4	C5932	G-4
Q3312	E-2	R3043	D-3	R4002	D-4	R5514	F-3	R6045	C-3	R6208	C-2	C3091	E-4	C6002	C-2
Q3313	E-2	R3044	D-3	R4003	D-4	R5601	E-2	R6046	C-3	R6209	C-3	C3232	D-3	C6003	A-1
Q3314	E-2	R3046	D-3	R4004	D-4	R5602	F-3	R6047	C-3	R6210	D-3	C3233	E-2	C6004	A-1
Q3315	E-2	R3077	E-2	R4005	D-4	R5603	F-3	R6048	C-3	R6211	C-3	C3235	E-2	C6006	G-1
Q4001	D-4	R3081	E-4	R4006	D-4	R5604	F-3	R6049	C-3	R6212	C-3	C3236	D-2	C6007	C-1
Q4002	D-4	R3082	E-4	R4008	D-4	R5610	E-3	R6050	C-3	R6213	C-3	C3237	D-2	C6008	C-1
Q4003	D-4	R3083	D-4	R4009	D-4	R5611	F-3	R6051	C-4	R6214	C-2	C3301	F-2	C6009	C-1
Q4004	E-1	R3084	E-4	R4010	D-4	R5612	F-3	R6052	B-2	R6215	C-2	C3302	F-2	C6010	C-2
Q4154	F-2	R3085	E-4	R4011	D-3	R5613	F-3	R6053	B-2	R6216	C-3	C3303	F-2	C6011	C-2
Q5301	F-4	R3092	E-4	R4012	D-4	R5902	G-3	R6054	B-2	R6217	C-4	C3305	F-2	C6012	A-1
Q5302	F-3	R3231	E-2	R4013	D-4	R5931	F-4	R6055	B-2	R6218	C-3	C3306	F-2	C6013	C-3
Q5601	F-3	R3301	F-2	R4014	D-4	R5932	F-4	R6056	B-2	R6219	C-2	C3307	F-2	C6014	C-3
Q5931	F-4	R3302	F-2	R4015	D-4	R5933	F-4	R6057	C-2	R6220	C-2	C3308	F-2	C6015	C-3
Q5951	F-3	R3303	F-2	R4018	D-3	R5934	F-4	R6058	B-2	R6221	C-2	C3310	F-2	C6016	C-3
Q5952	F-3	R3306	F-2	R4021	D-4	R5951	F-3	R6059	B-2	R6222	C-2	C3311	F-2	C6018	B-5
Q5953	F-3	R3307	G-2	R4030	B-5	R5952	F-3	R6060	B-1	R6223	C-3	C3312	F-2	C6020	C-3
Q6001	C-2	R3308	G-2	R4031	B-5	R5953	F-3	R6061	B-2	R6224	C-3	C3315	F-2	C6021	C-3
Q6002	D-2	R3309	G-2	R4032	B-5	R5954	E-3	R6062	B-1	R6229	B-3	C3316	F-2	C6022	C-3
Q6003	D-1	R3310	F-2	R4033	D-4	R5955	F-3	R6063	B-2	R6230	C-4	C3317	F-2	C6023	C-3
Q6004	A-1	R3312	G-2	R4034	E-1	R5956	F-3	R6064	B-2	R6231	C-3	C3318	F-2	C6024	B-2
Q6005	A-1	R3321	F-2	R4036	E-5	R5957	F-3	R6065	B-2	C3001	D-3	C3319	F-2	C6025	G-3
Q6006	A-1	R3325	F-2	R4101	C-5	R5958	G-3	R6066	B-2	C3002	D-3	C3320	F-3	C6026	B-3
Q6007	B-1	R3326	F-2	R4102	C-5	R6002	A-1	R6067	B-2	C3005	D-3	C3325	F-2	C6027	D-2
R1051	B-1	R3327	F-2	R4103	C-5	R6003	A-1	R6070	C-2	C3006	E-3	C3361	E-2	C6028	E-1
R1056	A-1	R3329	F-2	R4171	B-5	R6004	D-2	R6071	B-2	C3008	E-4	C3362	E-2	C6030	B-1
R3002	D-2	R3330	F-2	R5301	F-4	R6005	D-1	R6072	C-2	C3010	E-4	C3363	F-2	C6031	B-1
R3003	E-4	R3331	F-2	R5302	E-3	R6006	A-1	R6073	C-2	C3011	E-4	C3364	F-1	C6032	B-1
R3004	D-3	R3332	F-2	R5303	F-3	R6007	A-1	R6074	C-2	C3012	E-4	C3365	E-2	C6033	B-1
R3005	D-4	R3336	F-2	R5304	F-3	R6008	B-1	R6077	B-2	C3013	E-4	C3366	E-2	C6036	C-2
R3007	E-4	R3337	G-2	R5305	F-4	R6009	B-1	R6078	B-2	C3014	E-3	C4001	D-3	C6203	C-2
R3009	E-4	R3338	F-2	R5306	F-3	R6011	D-3	R6079	B-2	C3022	D-4	C4003	D-4	C6204	C-2
R3010	D-3	R3339	G-2	R5307	G-4	R6012	C-2	R6081	C-2	C3023	D-3	C4004	D-4	C6205	C-2
R3011	E-3	R3341	F-2	R5308	F-3	R6013	C-2	R6082	B-1	C3024	D-4	C4006	D-4	C6206	C-2
R3014	D-3	R3345	F-3	R5309	F-3	R6014	C-2	R6084	E-1	C3025	D-2	C4010	D-4	C6210	C-3
R3015	D-4	R3346	F-3	R5311	F-3	R6015	C-2	R6085	B-1	C3026	E-3	C4015	D-4	C6211	C-3
R3016	E-4	R3347	F-2	R5312	F-3	R6016	C-2	R6087	F-1	C3027	E-3	C4030	B-5	C6212	C-3
R3017	E-4	R3353	F-2	R5313	F-3	R6017	C-2	R6091	B-1	C3028	D-3	C4032	D-4	C6213	C-3
R3021	E-4	R3354	F-2	R5314	F-3	R6018	C-2	R6092	B-1	C3029	D-4	C4103	C-5	C6214	C-3
R3022	D-4	R3360	F-2	R5316	F-3	R6019	C-2	R6094	B-1	C3030	D-2	C4104	C-5	C6217	C-3
R3023	D-4	R3361	E-2	R5318	F-3	R6020	C-2	R6095	B-1	C3031	D-3	C4106	C-5	C6222	C-4
R3024	D-4	R3362	E-2	R5401	F-4	R6021	C-2	R6096	B-1	C3032	D-3	C5402	F-4	C6223	B-3
R3025	E-3	R3363	F-2	R5402	F-4	R6022	C-2	R6097	B-1	C3033	E-4	C5501	F-4	C6225	B-2
R3026	E-3	R3364	F-2	R5402	F-4	R6023	C-2	R6098	B-2	C3034	E-4	C5502	F-4	C6227	B-2
R3027	D-4	R3365	E-2	R5403	F-4	R6024	C-2	R6099	B-1	C3035	D-4	C5506	E-3	C6229	C-2
R3028	D-4	R3366	E-2	R5404	F-4	R6025	C-2	R6100	B-4	C3036	D-3	C5508	E-4	C6230	B-3
R3029	D-4	R3369	F-2	R5405	E-4	R6026	C-2	R6111	C-3	C3041	E-4	C5511	E-4	D3301	F-2
R3030	D-3	R3370	E-2	R5406	E-4	R6027	C-2	R6112	B-3	C3043	D-3	C5516	F-3		
R3031	D-3	R3372	F-2	R5501	F-4	R6028	C-2	R6113	C-2	C3044	D-3	C5601	F-3		
R3032	D-3	R3375	E-2	R5502	F-4	R6029	C-2	R6115	C-2	C3048	D-3	C5602	F-3		
R3033	F-4	R3376	E-2	R5502	F-4	R6031	C-2	R6118	C-4	C3053	D-3	C5603	F-3		
R3034	D-3	R3377	E-2	R5504	F-4	R6032	C-3	R6119	G-1	C3054	E-5	C5605	F-3		

TV MAIN C B A LRM61005D (A) /LRM61005C (B,C)

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



TV MAIN	
TRANSISTOR	
Q431	D-2
Q501	D-1
Q551	B-1
Q801	F-3
IC	
IC451	D-3

TV MAIN	
CONNECTOR	
A1	F-2
A2	F-2
A3	F-2
A4	F-1
A5	F-2
A6	C-3
A8	C-3
A11	C-3
A13	F-3
P803	F-2
P804	E-2
PK1	F-1
PK2	G-1
PK3	A-1
PK4	F-1
PK5	G-1
PK8	A-1
PK10	A-1

TV MAIN	
TEST POINT	
TP51	C-3
TP52	B-2
TP801	E-3
TP802	E-3
TPA9	A-3
TPD1	C-3
TPD2	C-3
TPD6	B-3

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCEMATIC SECTION.

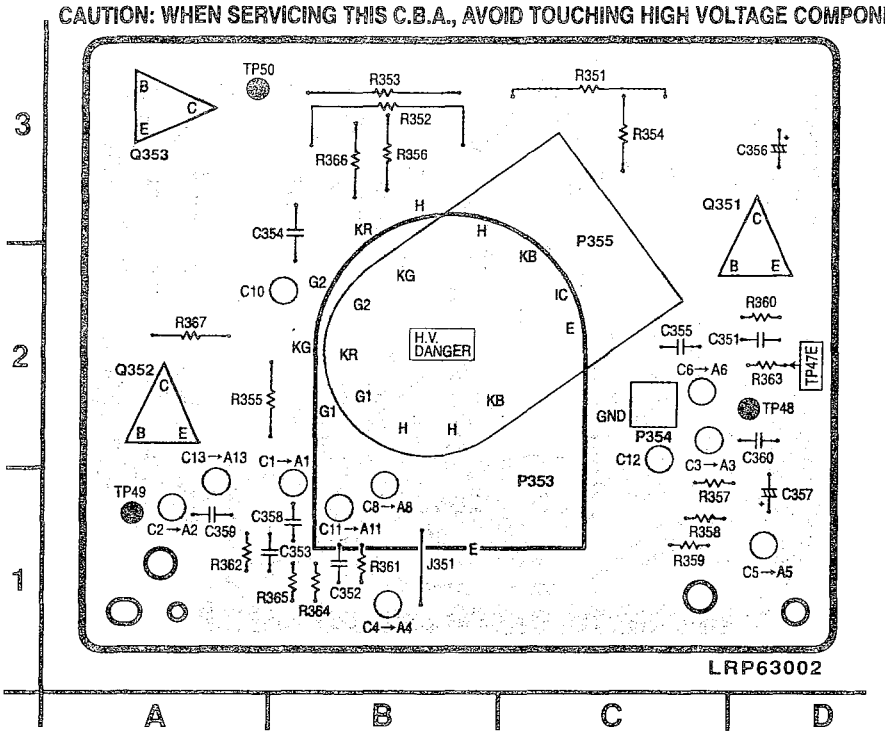
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

CRT C B.A. LRP63002N

CAUTION: WHEN SERVICING THIS C.B.A., AVOID TOUCHING HIGH VOLTAGE COMPONENTS.

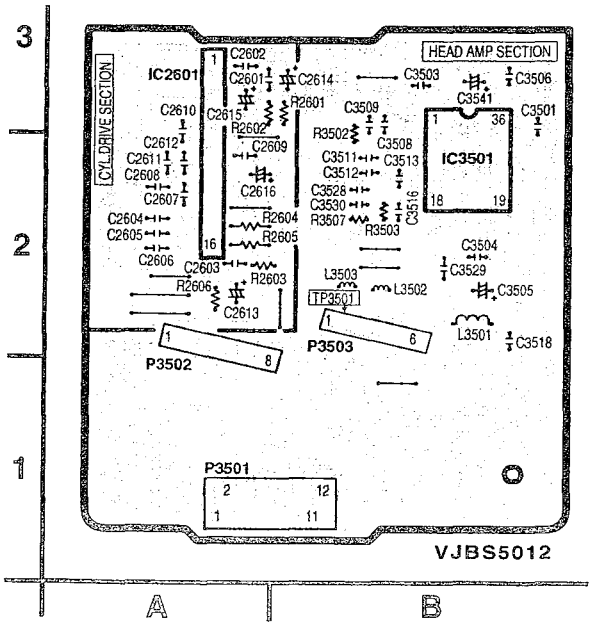


CRT	
TRANSISTOR	
Q351	C-3
Q352	A-2
Q353	A-3
CONNECTOR	
C1	A-2
C2	A-1
C3	C-2
C4	B-1
C5	D-1
C6	C-2
C8	B-1
C10	A-2
C11	B-1
C12	C-2
C13	A-2
P353	C-1
P354	C-2
P355	C-2
TEST POINT	
TP47E	D-2
TP48	D-2
TP49	A-1
TP50	A-3

NOTE:

CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

HEAD AMP C B A VEPS5012Z1 (A)

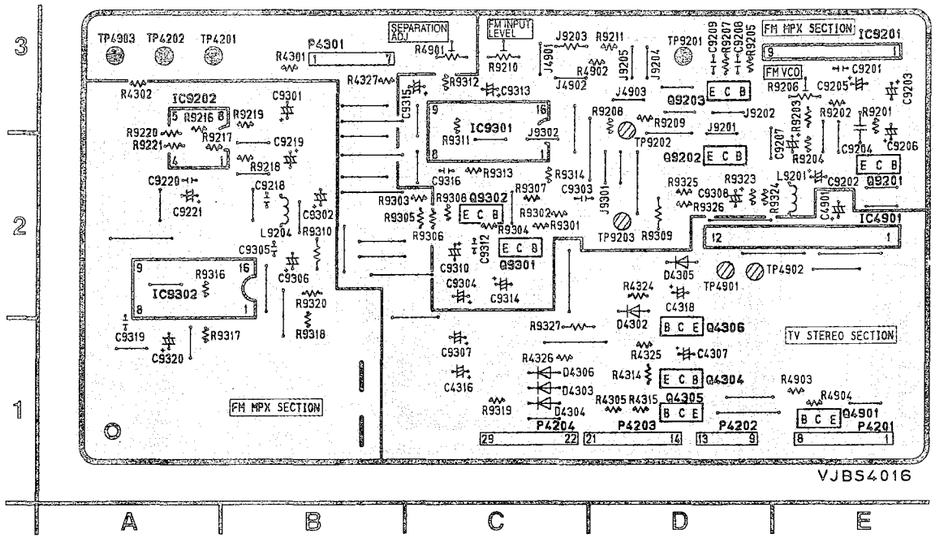


HEAD AMP	
IC	
IC2601	A-3
IC3501	B-2
CONNECTOR	
P3501	A-1
P3502	A-1
P3503	B-2
TEST POINT	
TP3501	B-2

LEADLESS COMPONENT PARTS LOCATION GUIDE
HEAD AMP C.B.A.

R2601	B-3	C2605	A-2	C3506	B-3
R2602	A-3	C2606	A-2	C3508	B-3
R2603	A-2	C2607	A-2	C3511	B-2
R2606	A-2	C2608	A-2	C3512	B-2
R3507	B-2	C2609	A-2	C3513	B-2
C2601	A-3	C2610	A-3	C3528	B-2
C2602	A-3	C2611	A-2	C3529	B-2
C2603	A-2	C2612	A-2		
C2604	A-2	C3504	B-2		

TV STEREO C.B.A. VEPS4016A1 (A)



NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

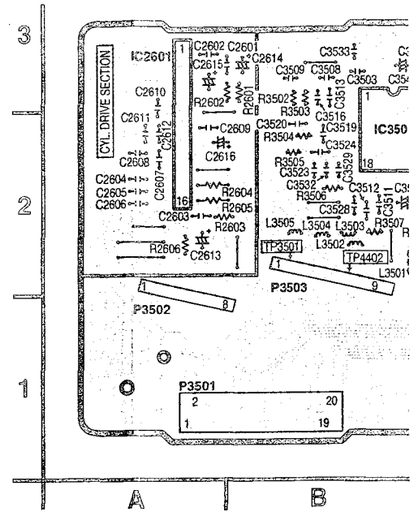
TV STEREO	
TRANSISTOR	
Q4304	D-1
Q4305	D-1
Q4306	D-1
Q4901	E-1
Q9201	E-2
Q9202	D-2
Q9203	D-3
Q9301	C-2
Q9302	C-2
IC	
IC4901	E-2
IC9201	E-3
IC9202	A-3
IC9301	C-3
IC9302	A-2

TV STEREO	
CONNECTOR	
P4201	E-1
P4202	D-1
P4203	D-1
P4204	C-1
P4301	B-3
TEST POINT	
TP4201	A-3
TP4202	A-3
TP4901	D-2
TP4902	D-2
TP4903	A-3
TP9201	D-3
TP9202	D-2
TP9203	D-2
ADJUSTMENT	
R4901	C-3
R9206	E-3
R9210	C-3

LEADLESS COMPONENT PARTS LOCATION GUIDE
TV STEREO C.B.A.

R4301	B-3	R9211	D-3	R9317	A-1
R4302	A-3	R9216	A-3	R9318	B-1
R4305	D-1	R9217	A-2	R9319	C-1
R4314	D-1	R9218	B-2	R9320	B-2
R4315	D-1	R9219	B-3	R9323	D-2
R4324	D-2	R9220	A-2	R9324	D-2
R4325	D-1	R9221	A-2	R9325	D-2
R4326	C-1	R9301	C-2	R9326	D-2
R4327	B-3	R9302	C-2	C9201	E-3
R4902	C-3	R9303	B-2	C9208	D-3
R4903	E-1	R9304	C-2	C9209	D-3
R4904	E-1	R9305	B-2	C9218	B-2
R9201	E-3	R9306	C-2	C9220	A-2
R9202	E-3	R9307	C-2	C9303	C-2
R9203	E-3	R9308	C-2	C9305	B-2
R9204	E-2	R9311	C-2	C9312	C-2
R9205	D-3	R9312	C-3	C9316	C-2
R9207	D-3	R9313	C-2	C9319	A-1
R9208	D-3	R9314	C-2		
R9209	D-3	R9316	A-2		

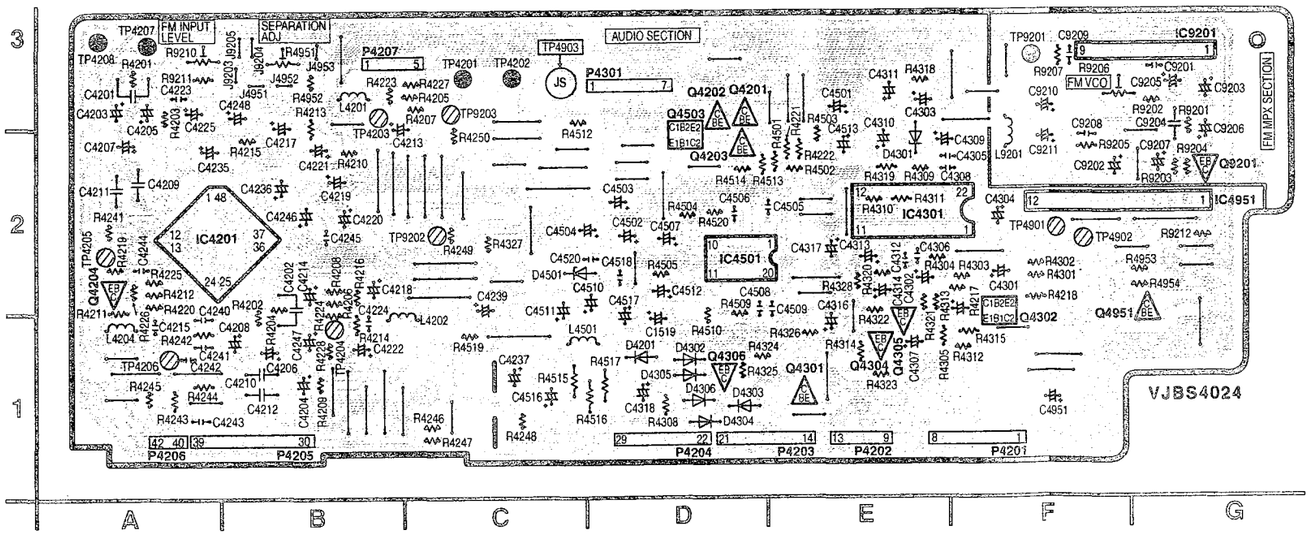
Hi-Fi AUDIO/VIDEO HEAD



NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPON
FOR PROPER PARTS CONTENT FOR THE M
PLEASE REFER TO THE SCHEMATIC DIAGR

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCEMATIC SECTION.

Hi-Fi AUDIO C.B A VEPS4024B (B,C)



NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

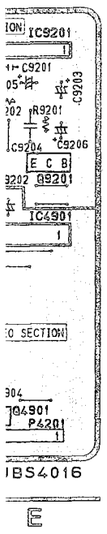
Hi-Fi AUDIO	
TRANSISTOR	
Q4201	D-3
Q4202	D-3
Q4203	D-2
Q4204	A-2
Q4301	E-1
Q4302	F-1
Q4304	E-1
Q4305	E-1
Q4306	D-1
Q4503	D-3
Q4951	F-1
Q9201	G-2
IC	
IC4201	A-2
IC4301	E-2
IC4501	D-2
IC4951	G-2
IC9201	G-3

Hi-Fi AUDIO	
CONNECTOR	
P4201	F-1
P4202	E-1
P4203	E-1
P4204	D-1
P4205	B-1
P4206	A-1
P4207	B-3
P4301	D-3
TEST POINT	
TP4201	C-3
TP4202	C-3
TP4203	B-2
TP4204	B-1
TP4205	A-2
TP4206	A-1
TP4207	A-3
TP4208	A-3
TP4901	F-2
TP4902	F-2
TP4903	C-3
TP9201	F-3
TP9202	B-2
TP9203	C-3

Hi-Fi AUDIO	
ADJUSTMENT	
R4951	B-3
R9206	F-3
R9210	A-3

LEADLESS COMPONE
Hi-Fi AUDIO C.B.A.

Q4201	D-3	R4212	/		
Q4202	D-3	R4213			
Q4203	D-2	R4214	E		
Q4204	A-2	R4215	E		
Q4301	E-1	R4216	E		
Q4302	F-1	R4217	E		
Q4304	E-1	R4218	E		
Q4305	E-2	R4219	/		
Q4306	D-1	R4220	/		
Q4503	D-2	R4221	E		
Q4951	F-1	R4222	E		
Q9201	G-2	R4223	E		
Q9202	F-2	R4224	E		
Q9203	F-2	R4225	/		
R4201	A-3	R4226	/		
R4202	B-1	R4227	(		
R4203	A-3	R4228	E		
R4204	A-2	R4241	/		
R4205	B-1	R4242	/		
R4206	B-1	R4243	/		
R4207	C-3	R4244	E		
R4208	B-2	R4245	/		
R4209	B-1	R4246	(		
R4210	B-2	R4247	(		
R4211	A-1	R4248	E		



; MODELS.

TV STEREO	
TRANSISTOR	
Q4304	D-1
Q4305	D-1
Q4306	D-1
Q4901	E-1
Q9201	E-2
Q9202	D-2
Q9203	D-3
Q9301	C-2
Q9302	C-2
IC	
IC4901	E-2
IC9201	E-3
IC9202	A-3
IC9301	C-3
IC9302	A-2

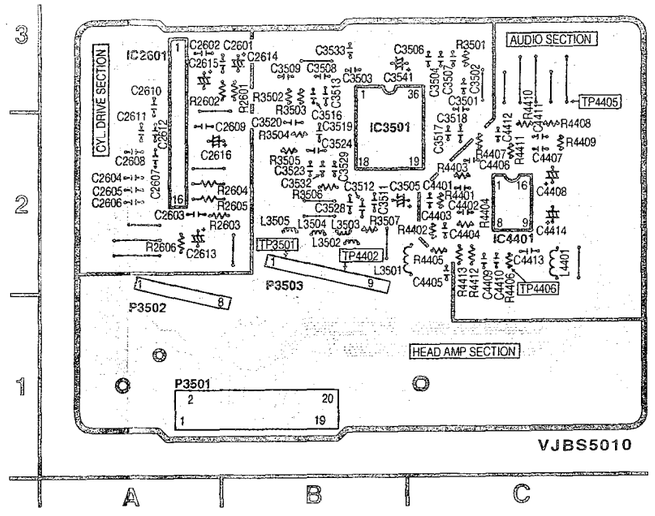
TV STEREO	
CONNECTOR	
P4201	E-1
P4202	D-1
P4203	D-1
P4204	C-1
P4301	B-3
TEST POINT	
TP4201	A-3
TP4202	A-3
TP4901	D-2
TP4902	D-2
TP4903	A-3
TP9201	D-3
TP9202	D-2
TP9203	D-2
ADJUSTMENT	
R4901	C-3
R9206	E-3
R9210	C-3

LEADLESS COMPONENT PARTS LOCATION GUIDE
TV STEREO C.B.A.

R4301	B-3	R9211	D-3	R9317	A-1
R4302	A-3	R9216	A-3	R9318	B-1
R4305	D-1	R9217	A-2	R9319	C-1
R4314	D-1	R9218	B-2	R9320	B-2
R4315	D-1	R9219	B-3	R9323	D-2
R4324	D-2	R9220	A-2	R9324	D-2
R4325	D-1	R9221	A-2	R9325	D-2
R4326	C-1	R9301	C-2	R9326	D-2
R4327	B-3	R9302	C-2	C9201	E-3
R4902	C-3	R9303	B-2	C9208	D-3
R4903	E-1	R9304	C-2	C9209	D-3
R4904	E-1	R9305	B-2	C9218	B-2
R9201	E-3	R9306	C-2	C9220	A-2
R9202	E-3	R9307	C-2	C9303	C-2
R9203	E-3	R9308	C-2	C9305	B-2
R9204	E-2	R9311	C-2	C9312	C-2
R9205	D-3	R9312	C-3	C9316	C-2
R9207	D-3	R9313	C-2	C9319	A-1
R9208	D-3	R9314	C-2		
R9209	D-3	R9316	A-2		

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A. VEPS5010Y (B,C)

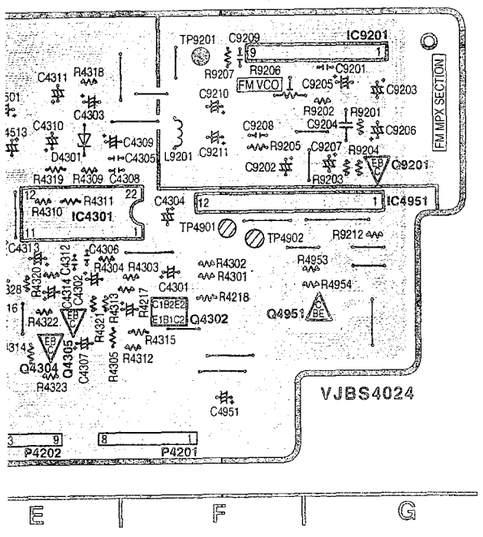


Hi-Fi AUDIO/VIDEO HEAD AMP	
IC	
IC2601	A-3
IC3501	C-2
IC4401	C-2
CONNECTOR	
P3501	A-1
P3502	A-1
P3503	B-1
TEST POINT	
TP3501	C-2
TP4402	B-2
TP4405	C-3
TP4406	C-2

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

LEADLESS COMPONENT
PARTS LOCATION GUIDE
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

R2601	B-3	C2602	A-3	C3519	B-2
R2602	A-2	C2603	A-2	C3520	B-2
R2603	A-2	C2604	A-2	C3523	B-2
R2606	A-2	C2605	A-2	C3524	B-2
R3501	C-3	C2606	A-2	C3528	B-2
R3502	B-3	C2607	A-2	C3529	B-2
R3503	B-3	C2608	A-2	C3532	B-2
R3504	B-2	C2609	A-2	C3533	B-3
R3505	B-2	C2610	A-3	C4401	C-2
R3506	B-2	C2611	A-2	C4402	C-2
R3507	B-2	C2612	A-2	C4403	C-2
R4401	C-2	C3501	C-3	C4404	C-2
R4402	C-2	C3502	C-3	C4405	C-2
R4403	C-2	C3503	B-3	C4406	C-2
R4404	C-2	C3504	C-3	C4407	C-2
R4405	C-2	C3506	C-3	C4409	C-2
R4406	C-2	C3507	C-3	C4410	C-2
R4407	C-2	C3508	B-3	C4411	C-2
R4408	C-2	C3509	B-3	C4412	C-2
R4409	C-2	C3511	B-2	C4413	C-2
R4410	C-2	C3512	B-2	L3502	B-2
R4411	C-2	C3513	B-2	L3503	B-2
R4412	C-2	C3516	B-2	L3504	B-2
R4413	C-2	C3517	C-2	L3505	B-2
C2601	B-3	C3518	C-2		



OUS MODELS.

Hi-Fi AUDIO	
TRANSISTOR	
Q4201	D-3
Q4202	D-3
Q4203	D-2
Q4204	A-2
Q4301	E-1
Q4302	F-1
Q4304	E-1
Q4305	E-1
Q4306	D-1
Q4503	D-3
Q4951	F-1
Q9201	G-2
IC	
IC4201	A-2
IC4301	E-2
IC4501	D-2
IC4951	G-2
IC9201	G-3

Hi-Fi AUDIO	
CONNECTOR	
P4201	F-1
P4202	E-1
P4203	E-1
P4204	D-1
P4205	B-1
P4206	A-1
P4207	B-3
P4301	D-3
TEST POINT	
TP4201	C-3
TP4202	C-3
TP4203	B-2
TP4204	B-1
TP4205	A-2
TP4206	A-1
TP4207	A-3
TP4208	A-3
TP4901	F-2
TP4902	F-2
TP4903	C-3
TP9201	F-3
TP9202	B-2
TP9203	C-3

Hi-Fi AUDIO	
ADJUSTMENT	
R4951	B-3
R9206	F-3
R9210	A-3

LEADLESS COMPONENT PARTS LOCATION GUIDE
Hi-Fi AUDIO C.B.A.

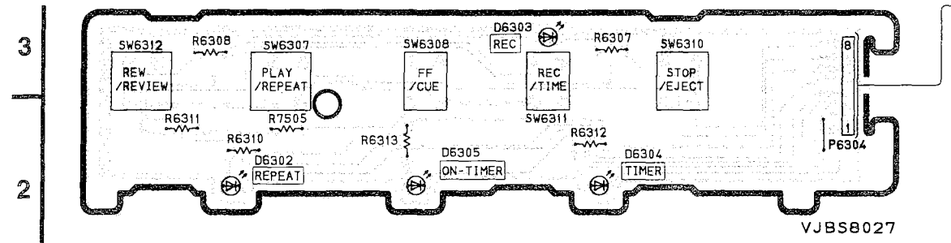
Q4201	D-3	R4212	A-2	R4249	C-2	R4328	E-2	C4215	A-1
Q4202	D-3	R4213	B-2	R4250	C-2	R4501	D-2	C4223	A-3
Q4203	D-2	R4214	B-1	R4301	F-2	R4502	E-2	C4224	B-1
Q4204	A-2	R4215	B-2	R4302	F-2	R4503	E-3	C4243	A-1
Q4301	E-1	R4216	B-2	R4303	E-2	R4504	D-2	C4224	A-1
Q4302	F-1	R4217	F-2	R4304	E-2	R4505	D-2	C4240	A-1
Q4304	E-1	R4218	F-2	R4305	E-1	R4509	D-1	C4241	A-1
Q4305	E-2	R4219	A-2	R4308	D-1	R4510	D-2	C4242	A-1
Q4306	D-1	R4220	A-2	R4309	E-2	R4512	C-2	C4243	A-1
Q4503	D-2	R4221	E-2	R4310	E-2	R4513	D-2	C4244	A-2
Q4951	F-1	R4222	E-2	R4311	E-2	R4514	D-2	C4245	B-2
Q9201	G-2	R4223	B-3	R4312	E-1	R4519	C-1	C4305	E-2
Q9202	F-2	R4224	B-1	R4313	E-1	R4520	D-2	C4306	E-2
Q9203	F-2	R4225	A-2	R4314	E-1	R4952	B-3	C4308	E-2
R4201	A-3	R4226	A-2	R4315	F-1	R4953	F-2	C4309	E-2
R4202	B-1	R4227	C-3	R4318	E-3	R4954	F-2	C4312	E-2
R4203	A-3	R4228	B-1	R4319	E-2	R9201	G-3	C4505	D-2
R4204	A-2	R4241	A-2	R4320	E-2	R9202	G-3	C4506	D-2
R4205	B-1	R4242	A-1	R4321	E-2	R9203	G-2	C4508	D-2
R4206	B-1	R4243	A-1	R4322	E-1	R9204	G-2	C4509	E-2
R4207	C-3	R4244	B-1	R4323	E-1	R9205	F-2	C4518	D-2
R4208	B-2	R4245	A-1	R4324	D-1	R9207	F-3	C4520	C-2
R4209	B-1	R4246	C-1	R4325	D-1	R9208	F-3	C9201	F-3
R4210	B-2	R4247	C-1	R4326	E-1	R9209	F-3	C9208	F-2
R4211	A-1	R4248	C-1	R4327	C-2	R9211	A-3	C9209	F-3

COMPARISON CHART
OF MODELS & MARKS

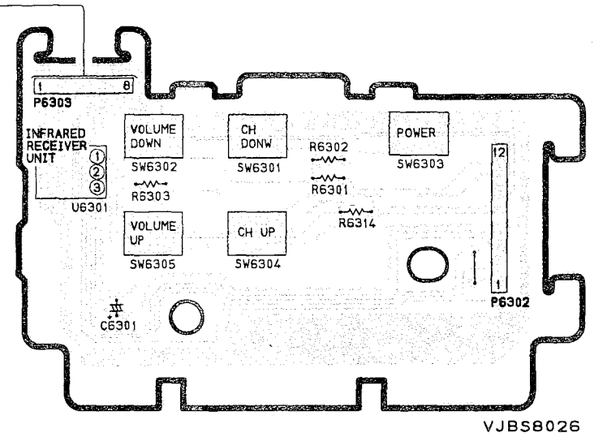
MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

OPERATION I/II C B.A.

OPERATION II C.B.A. VEPS8027A1



OPERATION I C.B.A. VEPS8026A1

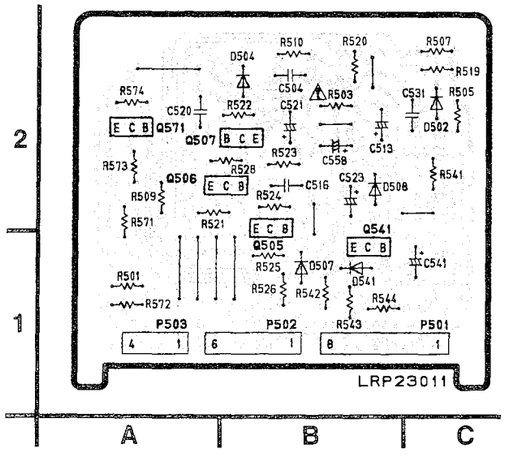


NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

TV MAIN CHILD C.B.A. LRP23011A



TV MAIN CHILD	
TRANSISTOR	
Q505	D-3
Q506	A-2
Q507	A-3
Q541	B-2
Q571	A-2
CONNECTOR	
P501	C-1
P502	C-2
P503	C-3

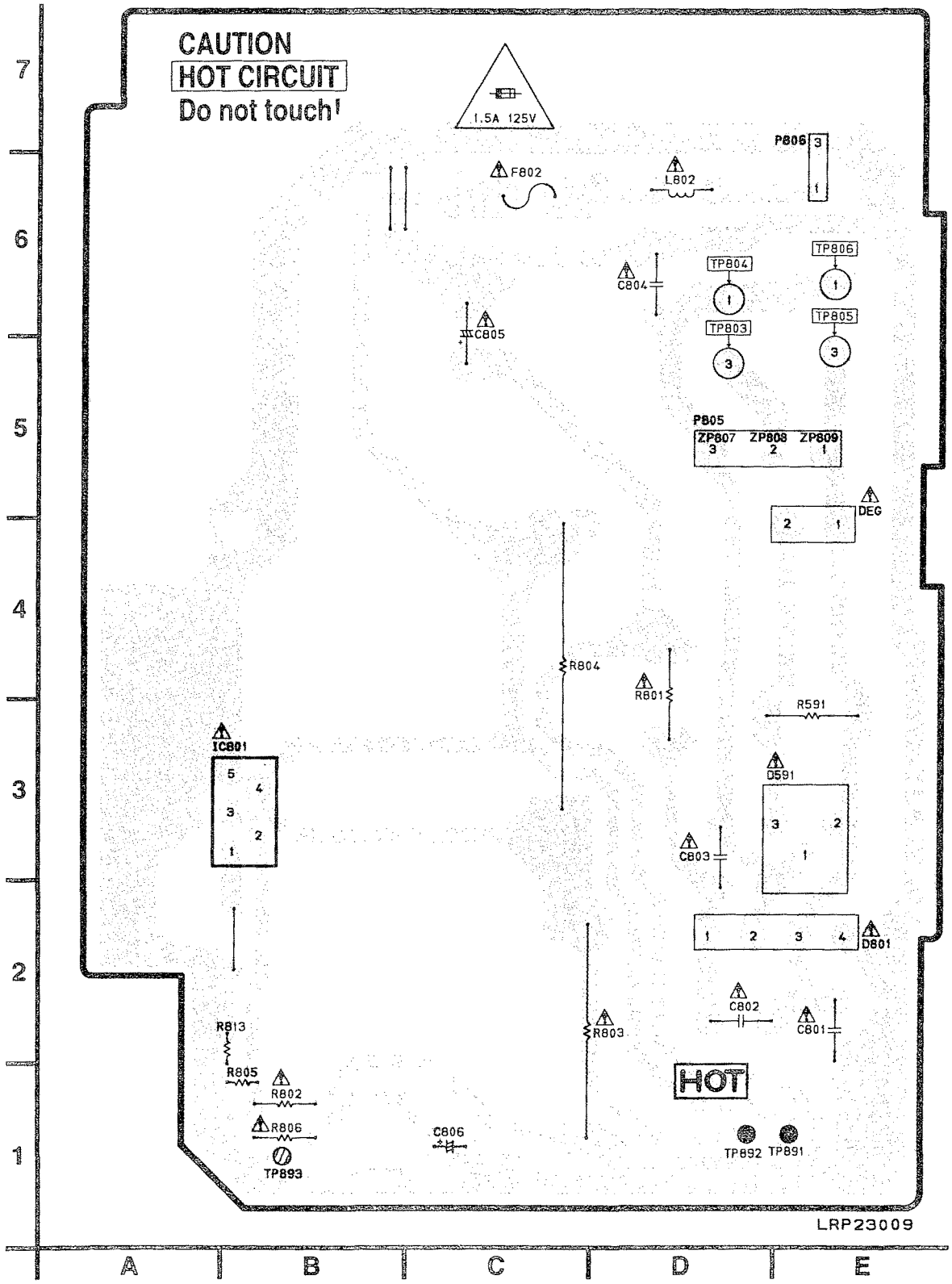
NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

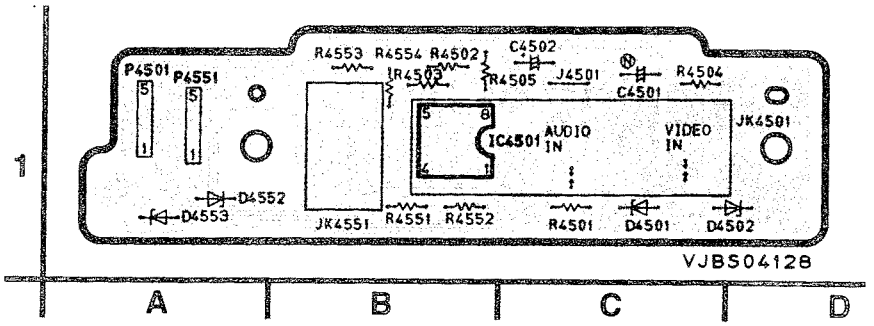
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCEMATIC SECTION.

TV POWER C.B.A. LRP23009A

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING



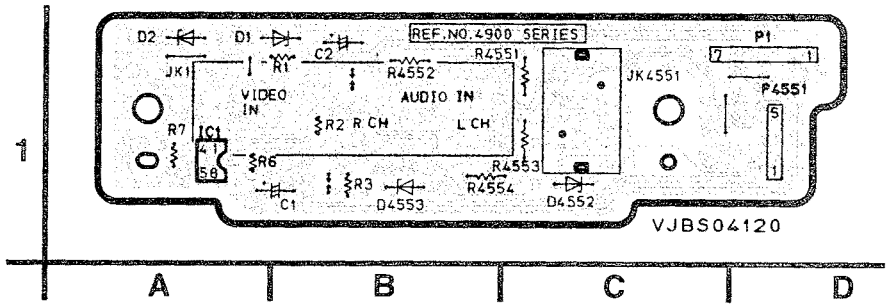
AUDIO/VIDEO JACK C B A. VEPS04128F1 (A)



NOTE:

CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

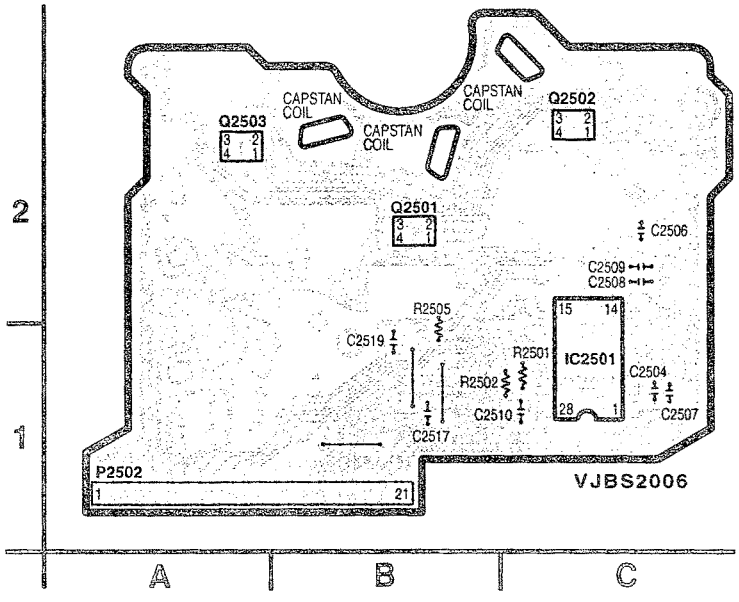
AUDIO/VIDEO JACK C B A VEPS04120G1 (B,C)



NOTE:

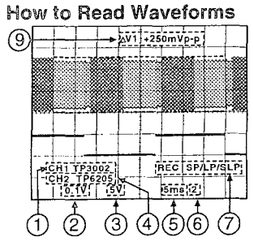
1.CAPSTAN STATOR UNIT IS SUPPLIED AS A CAPSTAN STATOR KIT ONLY.
HOWEVER, IC2501(AN3845SC) IS AVAILABLE SEPARATELY AS A REPLACEMENT PART
2.WHEN INSTALLING THE IC2501 OR CAPSTAN STATOR UNIT, BE SURE TO APPLY
SILICON GREASE (VFK1301). REFER TO "CAPSTAN STATOR UNIT "OF
"DISASSEMBLY/ASSEMBLY PROCEDURES OF MECHANISM " SECTION

CAPSTAN STATOR UNIT



SIGNAL WAVEFORM

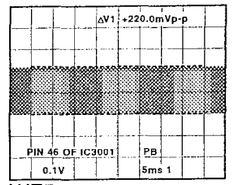
How to Read Waveforms



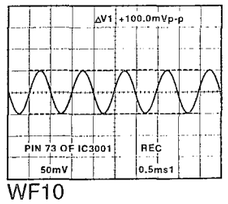
WF1 ← ⑧

① Connecting Point
② Volts/Div
③ Volts/Div
④ Connecting Point
⑤ Time/Div
⑥ Trigger Channel of the scope (1:CH1,2:CH2)
⑦ Operation Mode of VCR
⑧ Waveform Point on Schematic
⑨ ΔV1:Peak to Peak

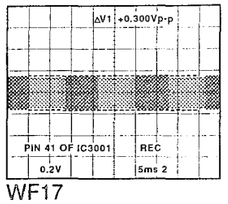
MAIN C.B.A.



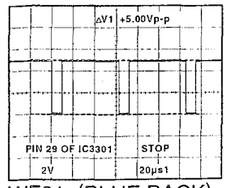
WF5



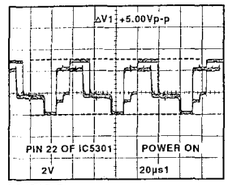
WF10



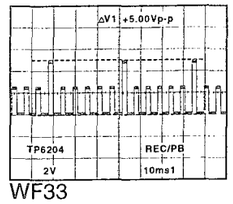
WF17



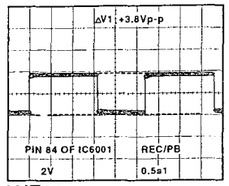
WF21 (BLUE BACK)



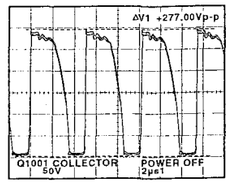
WF28



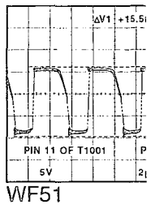
WF33



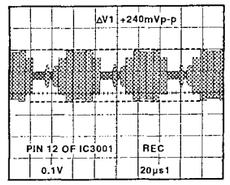
WF38



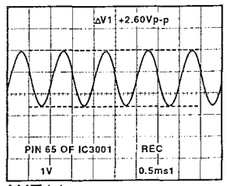
WF45



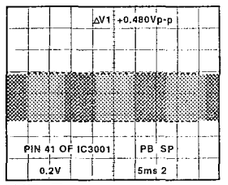
WF51



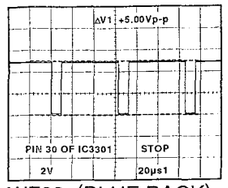
WF6



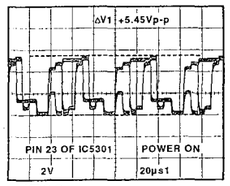
WF11



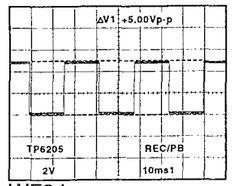
WF17



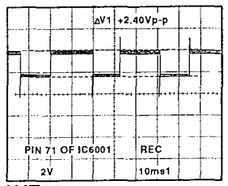
WF22 (BLUE BACK)



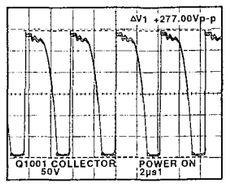
WF29



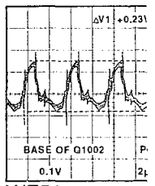
WF34



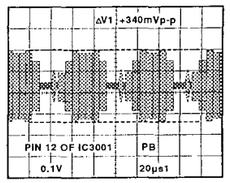
WF39



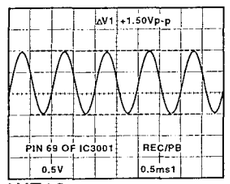
WF45



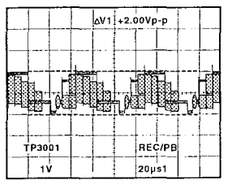
WF52



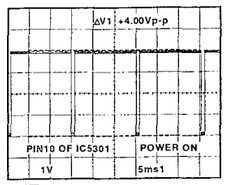
WF6



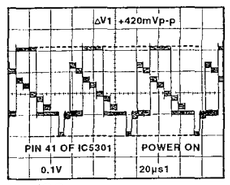
WF12



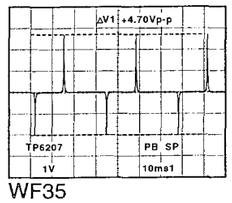
WF18



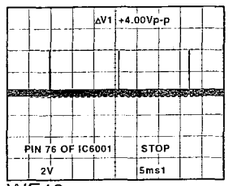
WF23



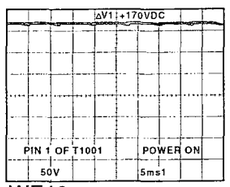
WF30



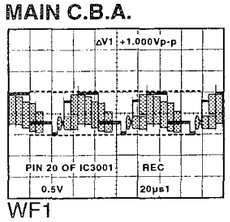
WF35



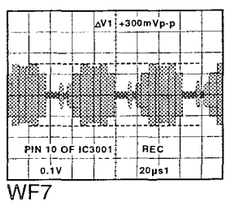
WF40



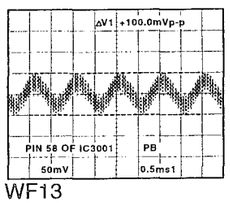
WF46



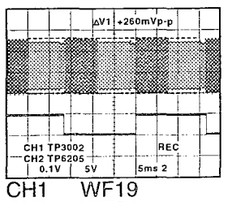
WF1



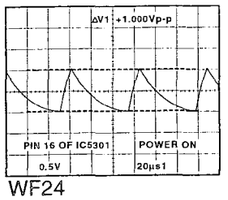
WF7



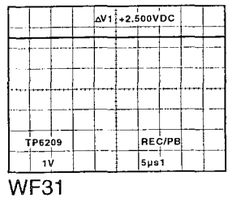
WF13



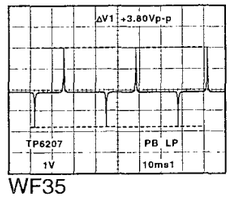
CH1 WF19
CH2 WF34



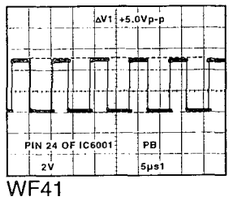
WF24



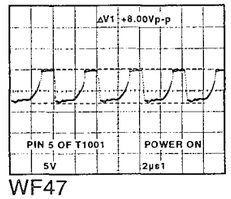
WF31



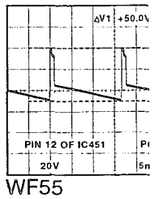
WF35



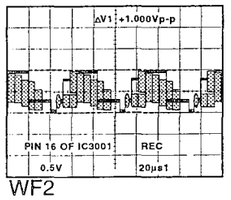
WF41



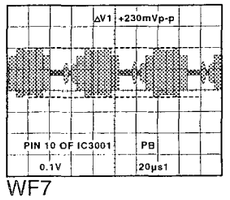
WF47



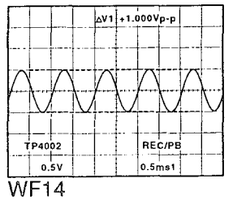
WF55



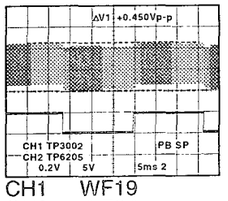
WF2



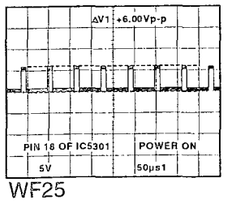
WF7



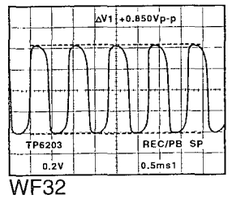
WF14



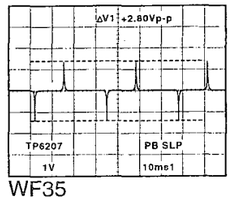
CH1 WF19
CH2 WF34



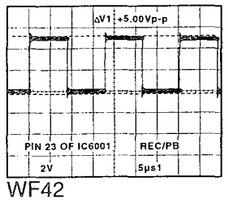
WF25



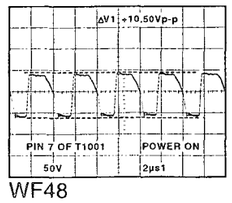
WF32



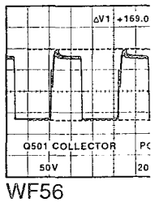
WF35



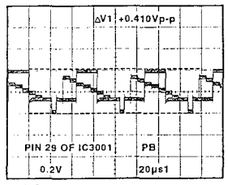
WF42



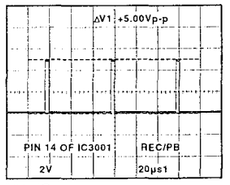
WF48



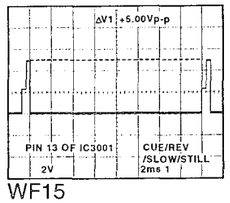
WF56



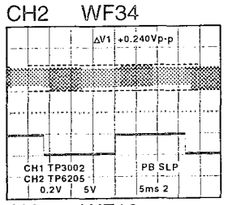
WF3



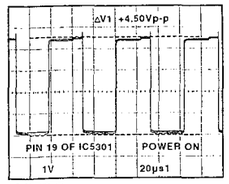
WF8



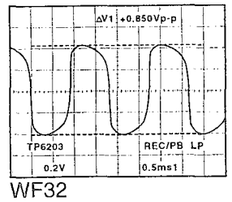
WF15



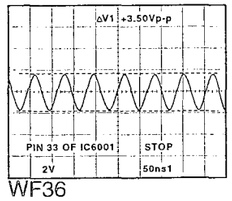
CH1 WF19
CH2 WF34



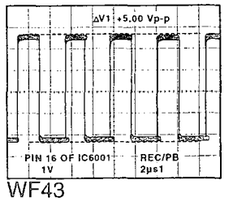
WF26



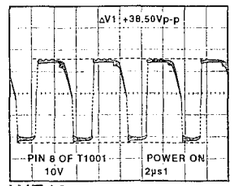
WF32



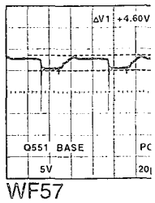
WF36



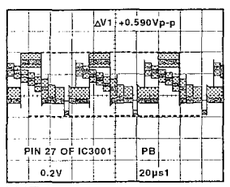
WF43



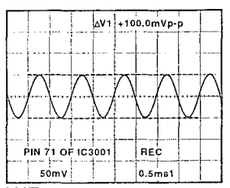
WF49



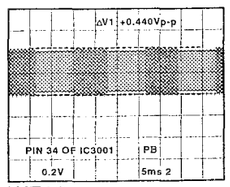
WF57



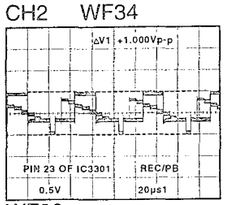
WF4



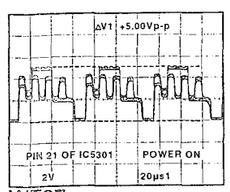
WF9



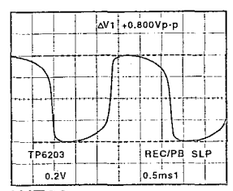
WF16



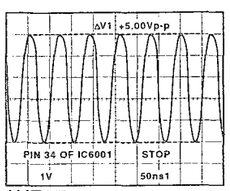
WF20



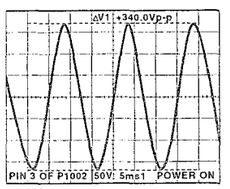
WF27



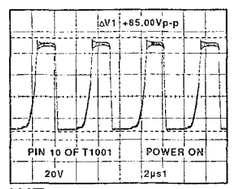
WF32



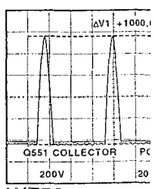
WF37



WF44

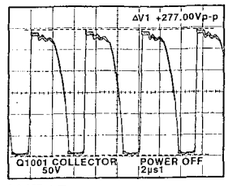


WF50

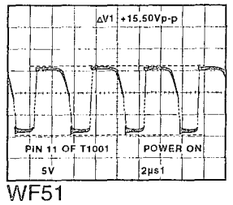


WF58

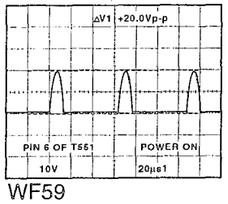
TV MAIN C.B.A



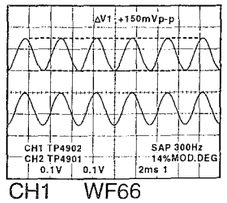
WF45



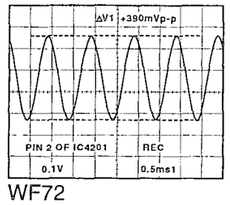
WF51



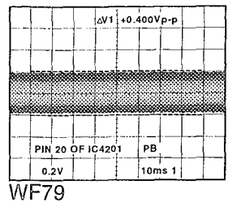
WF59



CH1 WF66
CH2 WF67

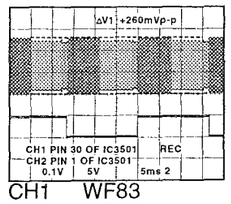


WF72

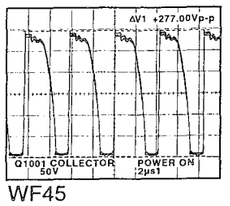


WF79

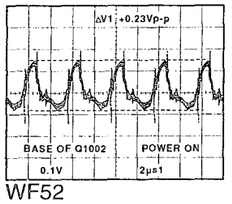
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A. (B,C)



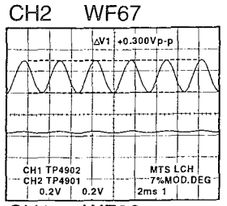
CH1 WF83
CH2 WF84



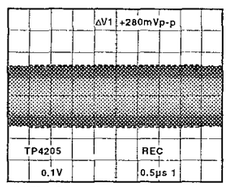
WF45



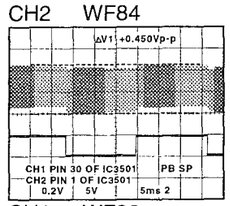
WF52



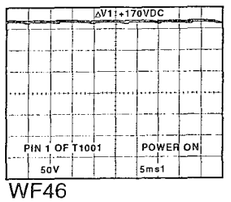
CH1 WF66
CH2 WF67



WF73

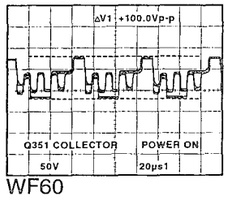


CH1 WF83
CH2 WF84



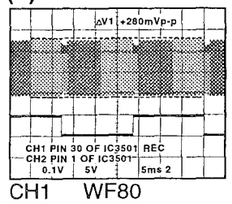
WF46

CRT C.B.A.

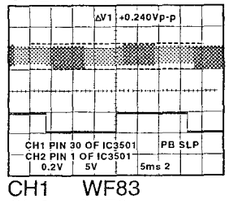


WF60

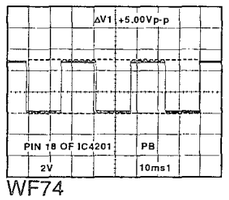
HEAD AMP C.B.A. (A)



CH1 WF80
CH2 WF81

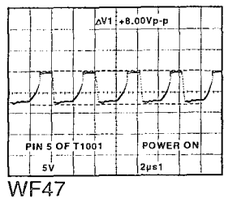


CH1 WF83
CH2 WF84

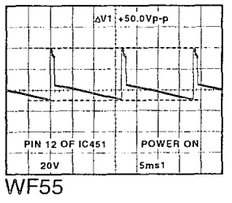


WF74

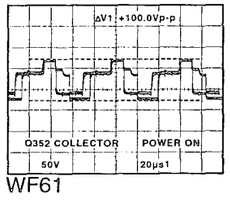
TV MAIN C.B.A.



WF47

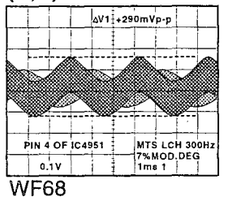


WF55

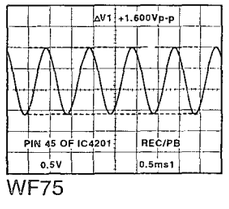


WF61

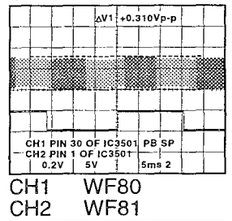
Hi-Fi AUDIO C.B.A. (B,C)



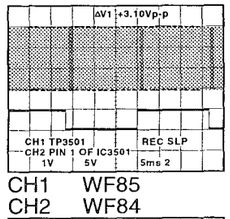
WF68



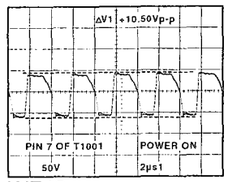
WF75



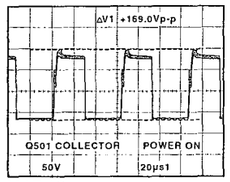
CH1 WF80
CH2 WF81



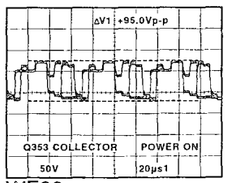
CH1 WF85
CH2 WF84



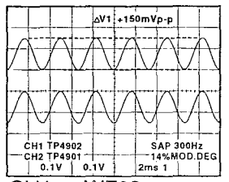
WF48



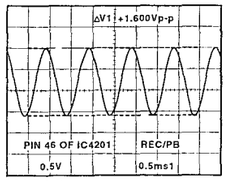
WF56



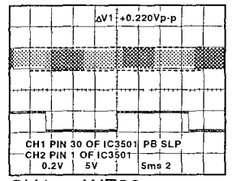
WF62



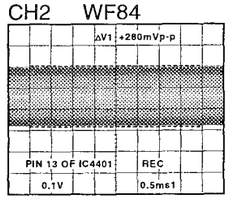
CH1 WF69
CH2 WF70



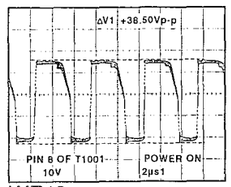
WF76



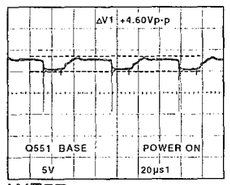
CH1 WF80
CH2 WF81



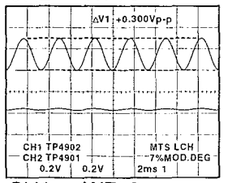
WF86



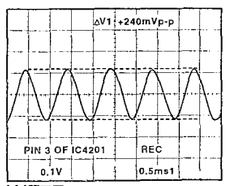
WF49



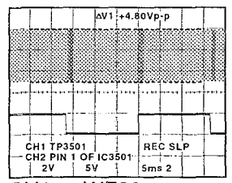
WF57



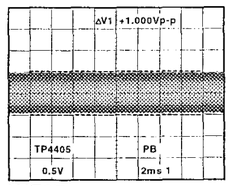
CH1 WF69
CH2 WF70



WF77

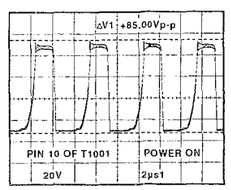


CH1 WF82
CH2 WF81

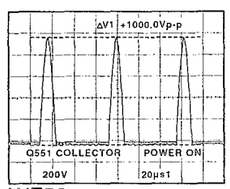


WF87

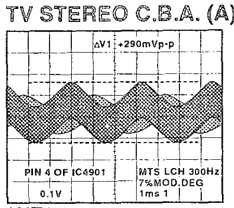
TV STEREO C.B.A. (A)



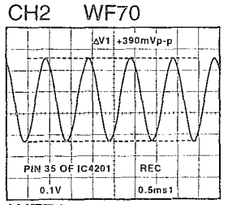
WF50



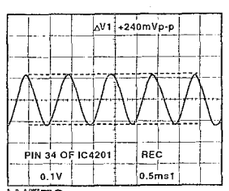
WF58



WF65



WF71



WF78

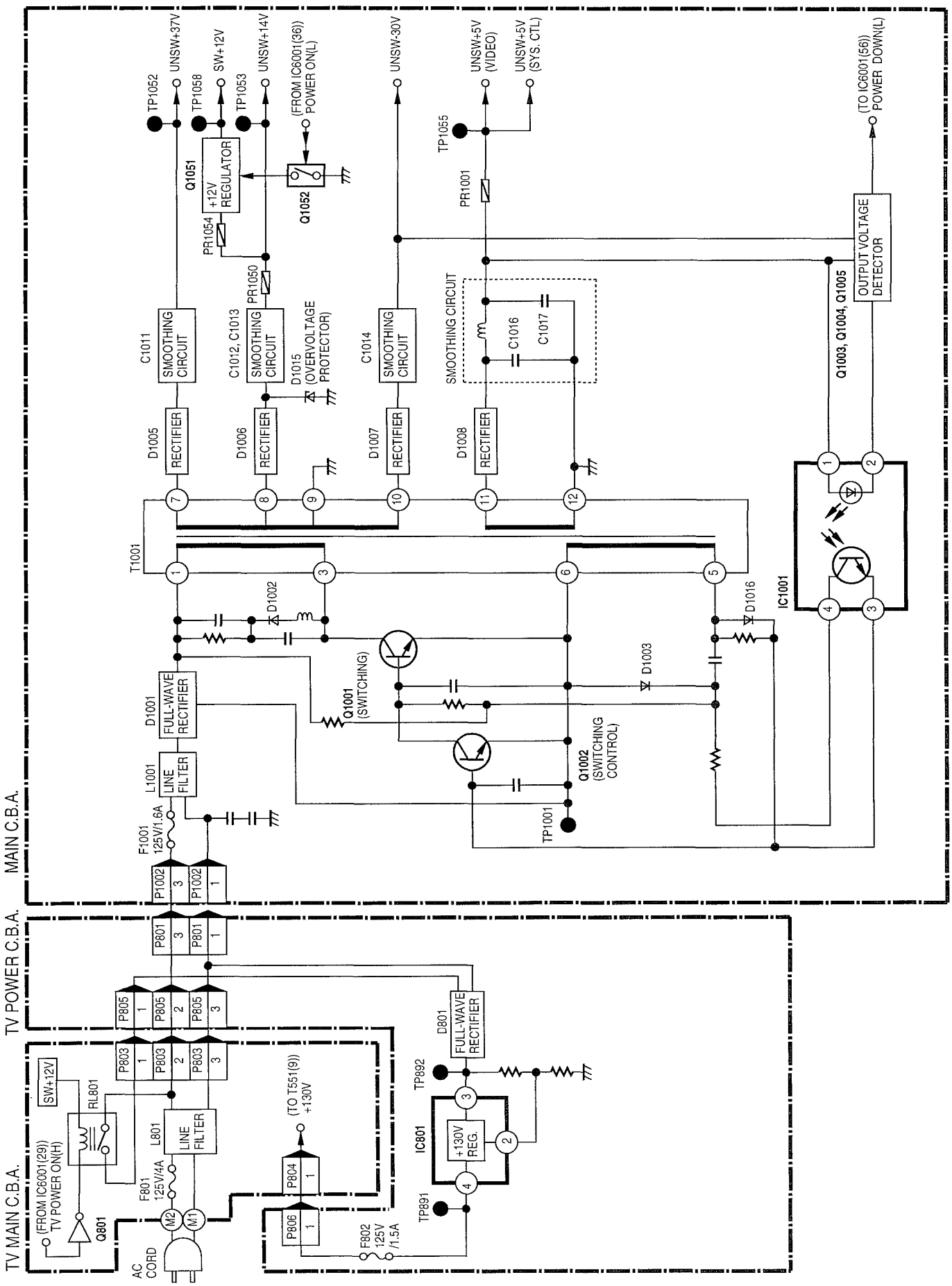
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

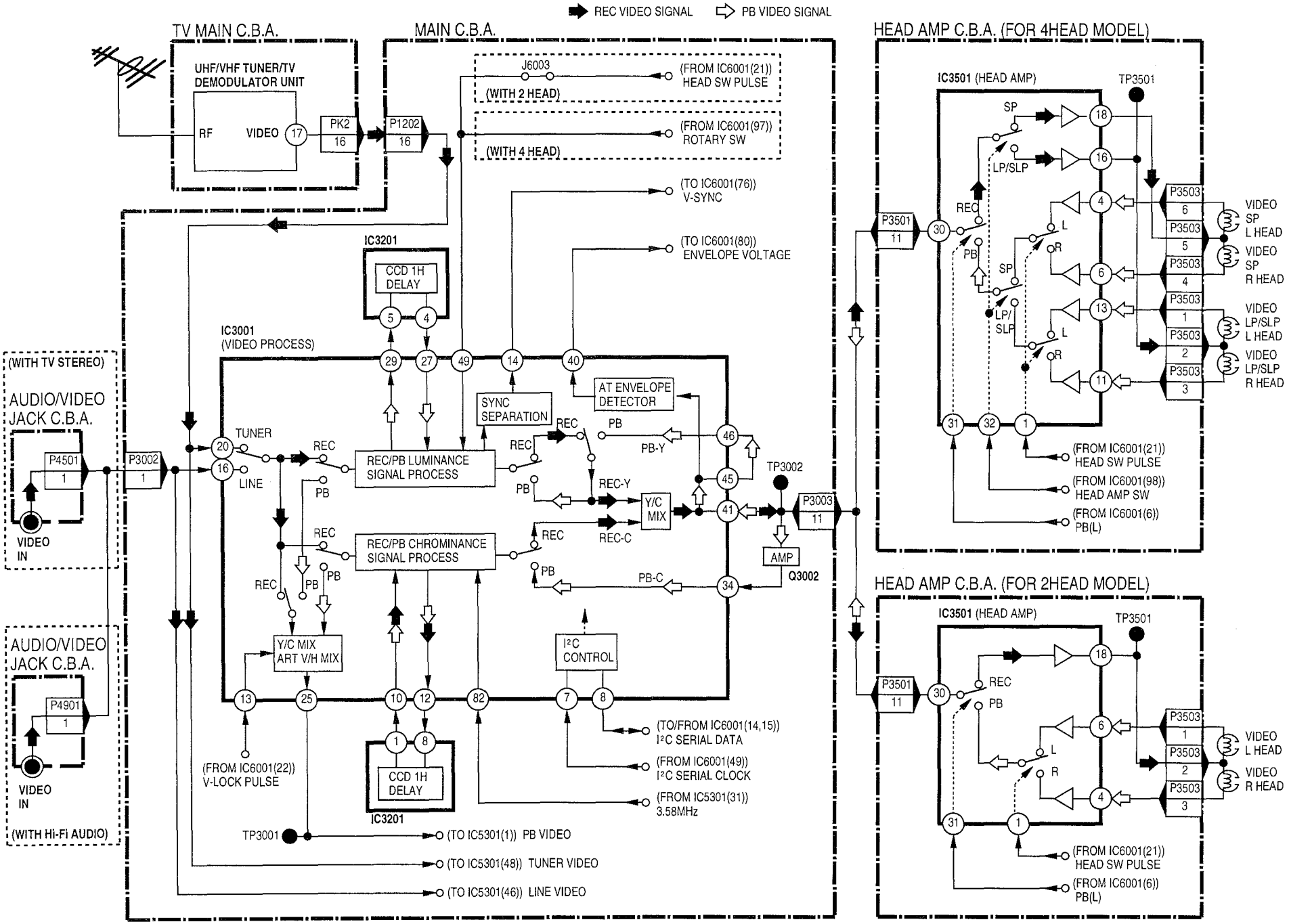
MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C
Not Used	Z

BLOCK DIAGRAMS

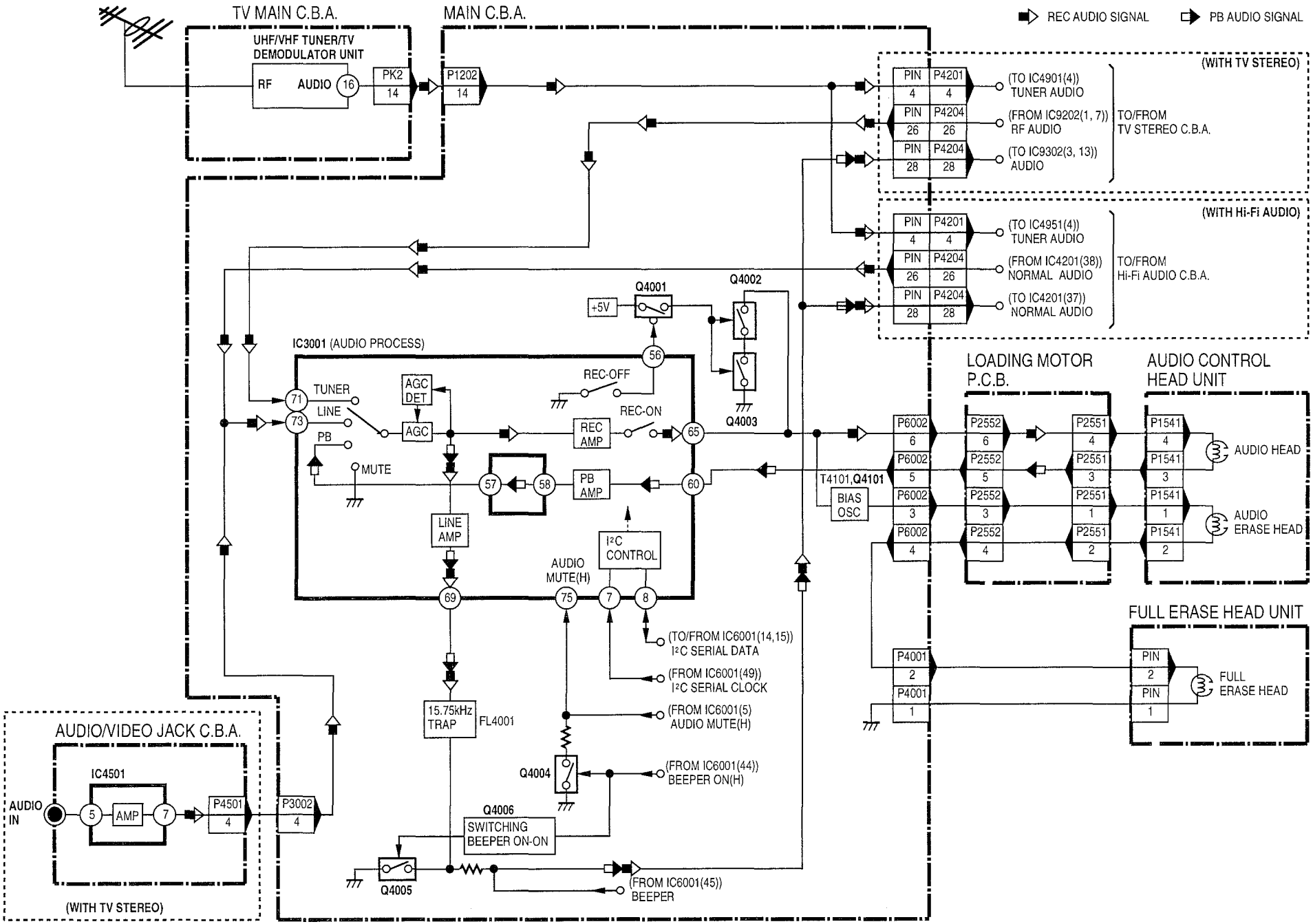
POWER SUPPLY BLOCK DIAGRAM



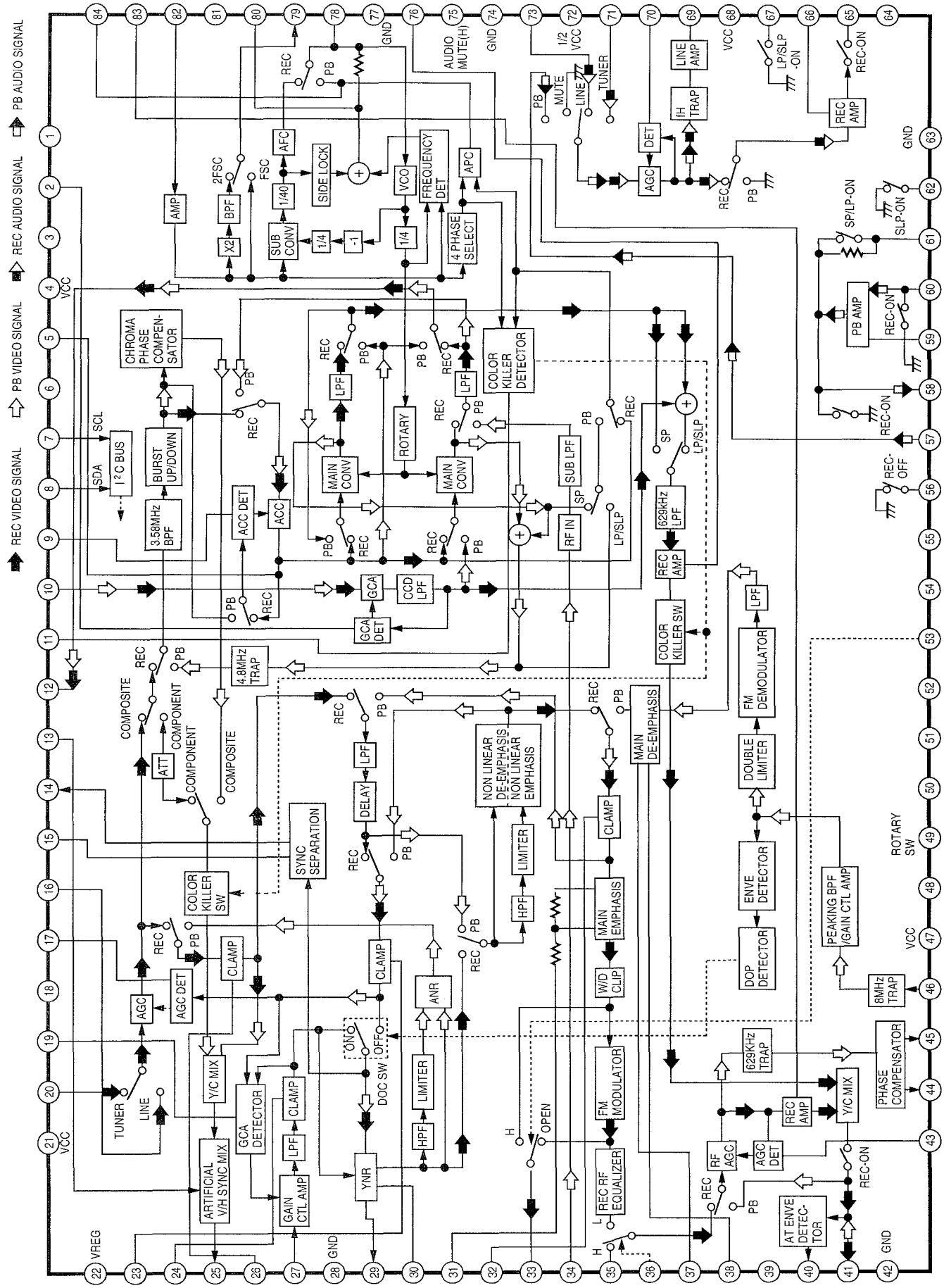
VIDEO SIGNAL PATH BLOCK DIAGRAM



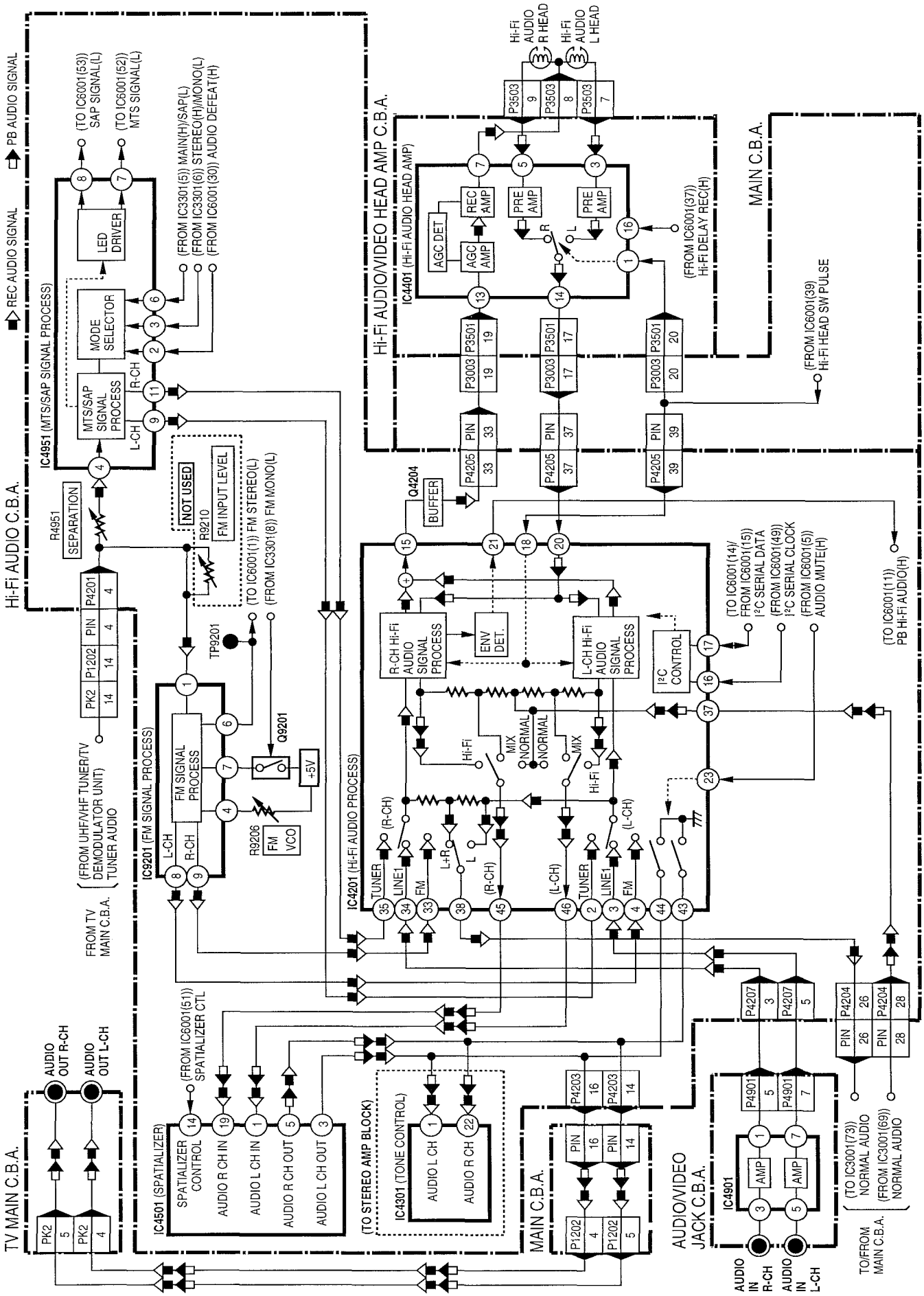
AUDIO SIGNAL PATH BLOCK DIAGRAM



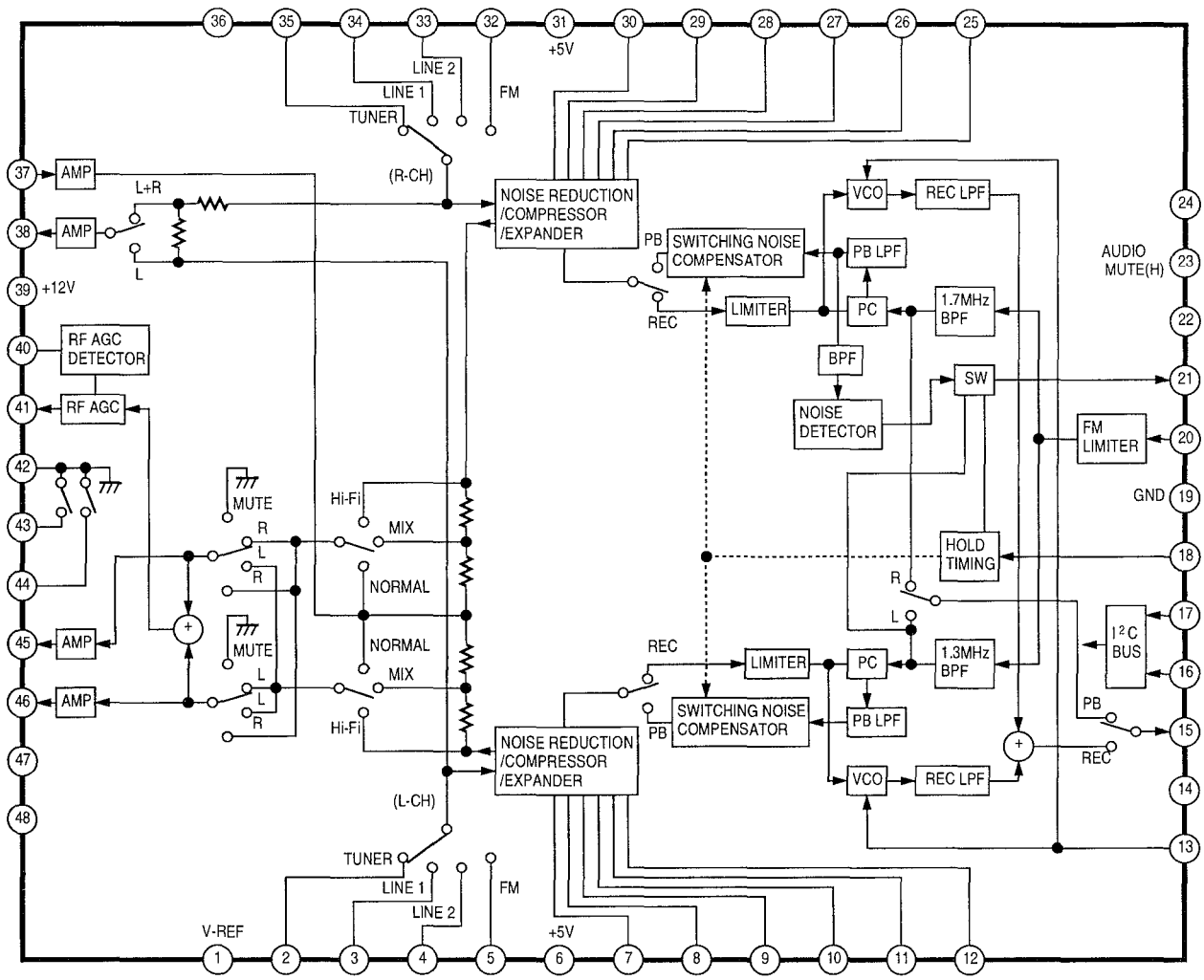
IC3001 VIDEO/AUDIO PROCESS IC-BLOCK DIAGRAM, AN3476FBP



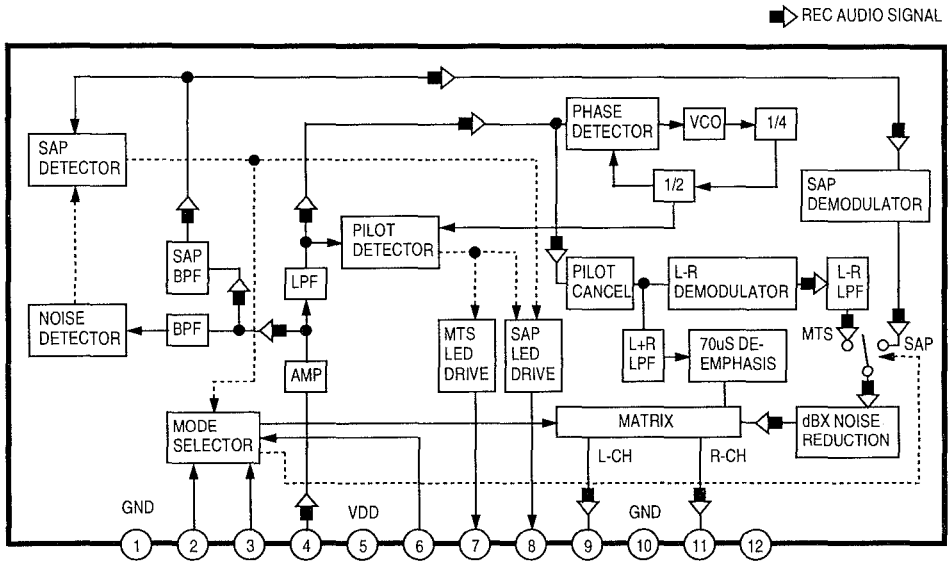
Hi-Fi AUDIO SIGNAL PATH BLOCK DIAGRAM (PV-M2768/PV-M2768-K)



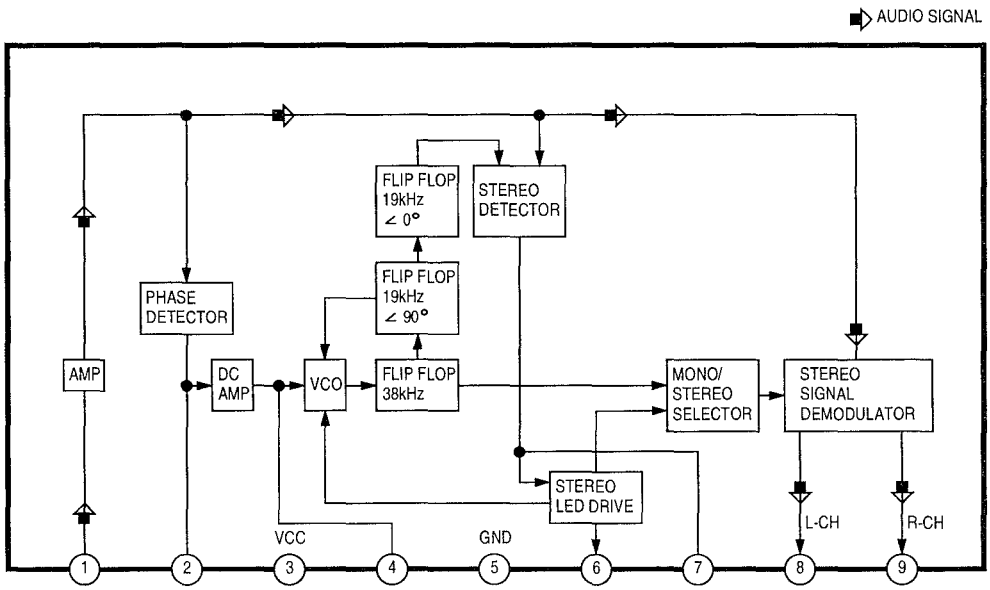
IC4201 Hi-Fi AUDIO PROCESS IC-BLOCK DIAGRAM, AN3962FB-V



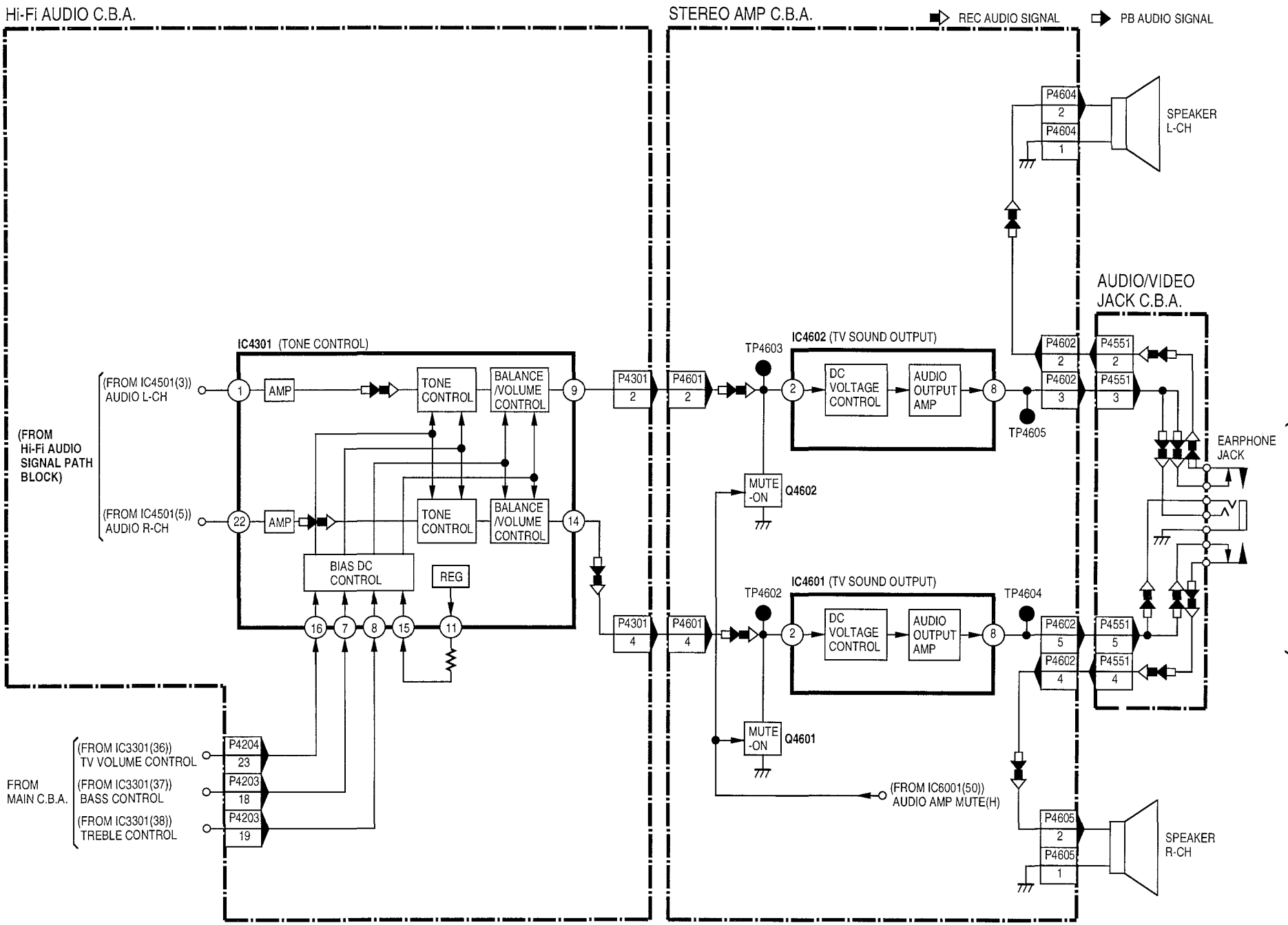
IC4951 MTS/SAP AUDIO PROCESS IC-BLOCK DIAGRAM, VCRS0216



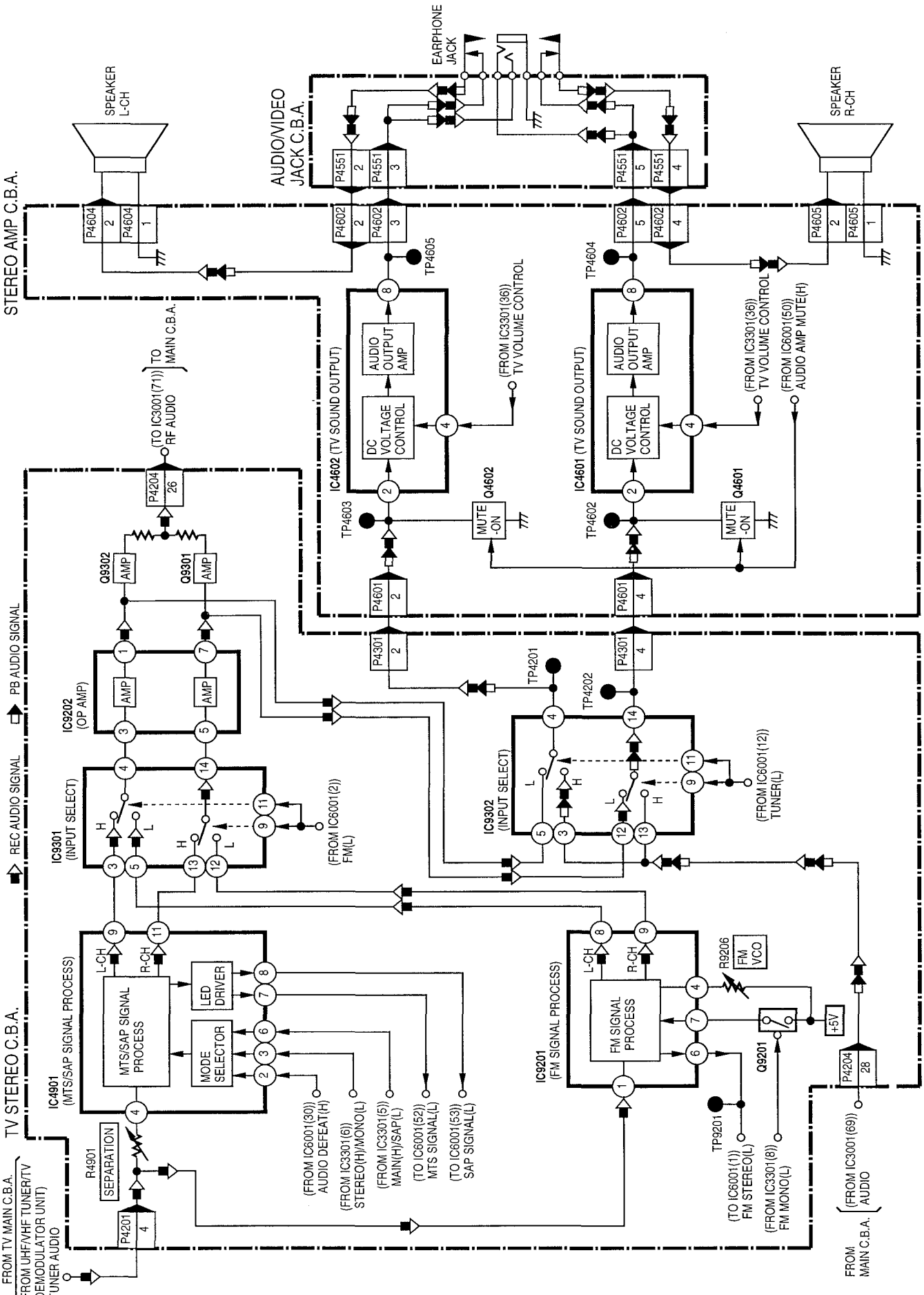
IC9201 FM STEREO MULTIPLEX DEMODULATOR IC-BLOCK DIAGRAM, AN7420

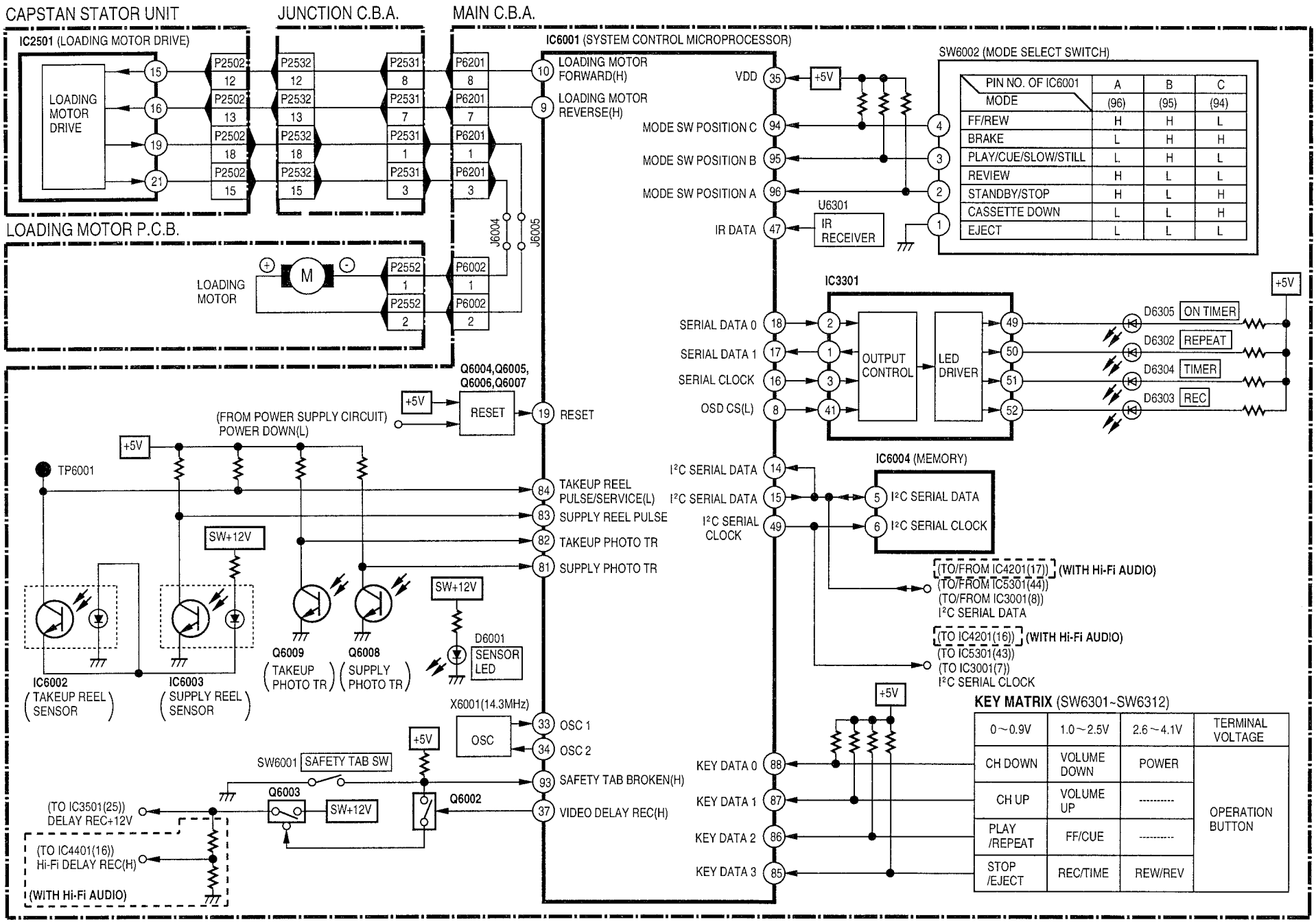


STEREO AMP BLOCK DIAGRAM (PV-M2768/PV-M2768-K)



TV STEREO/STEREO AMP BLOCK DIAGRAM (PV-M2738)

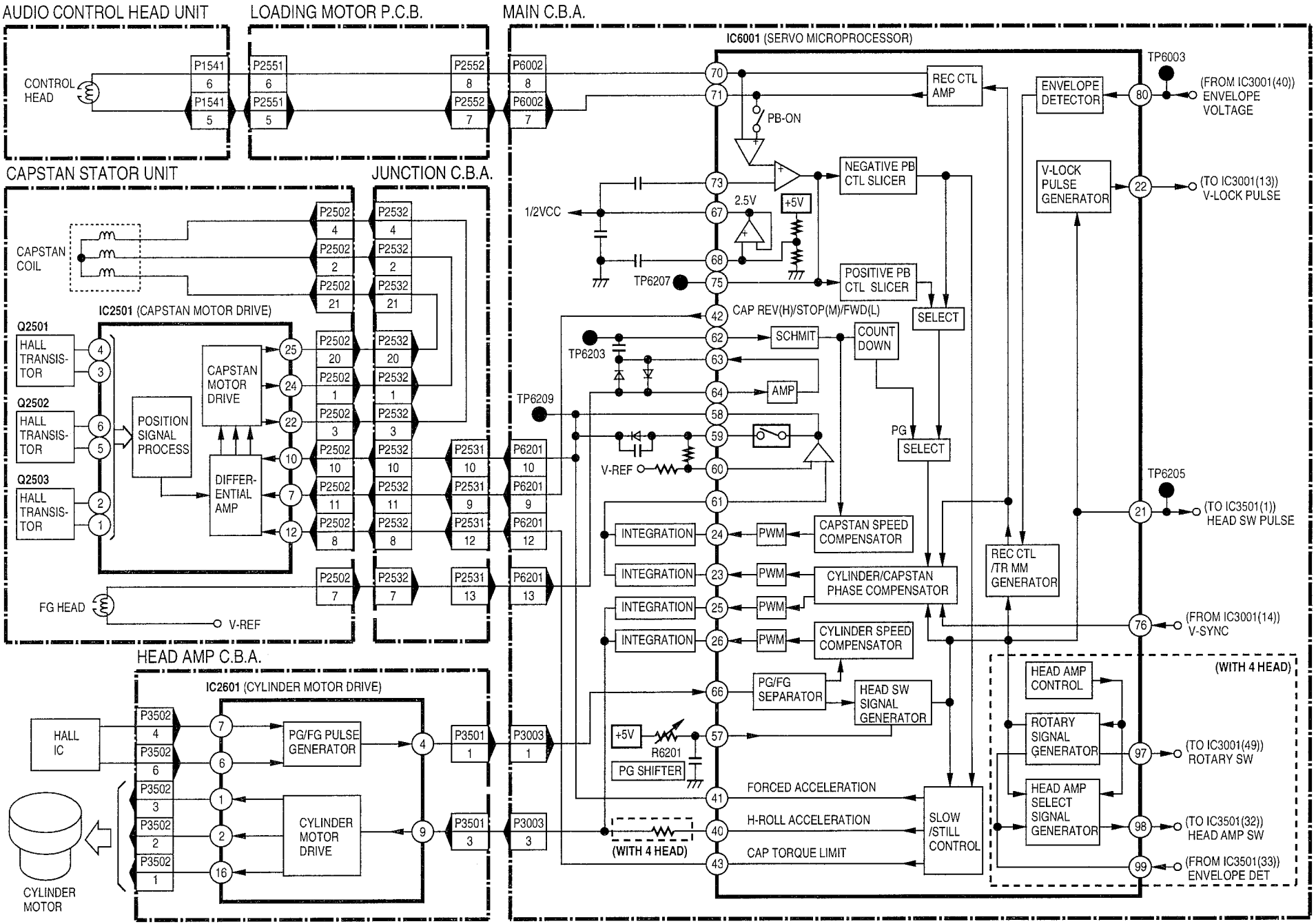




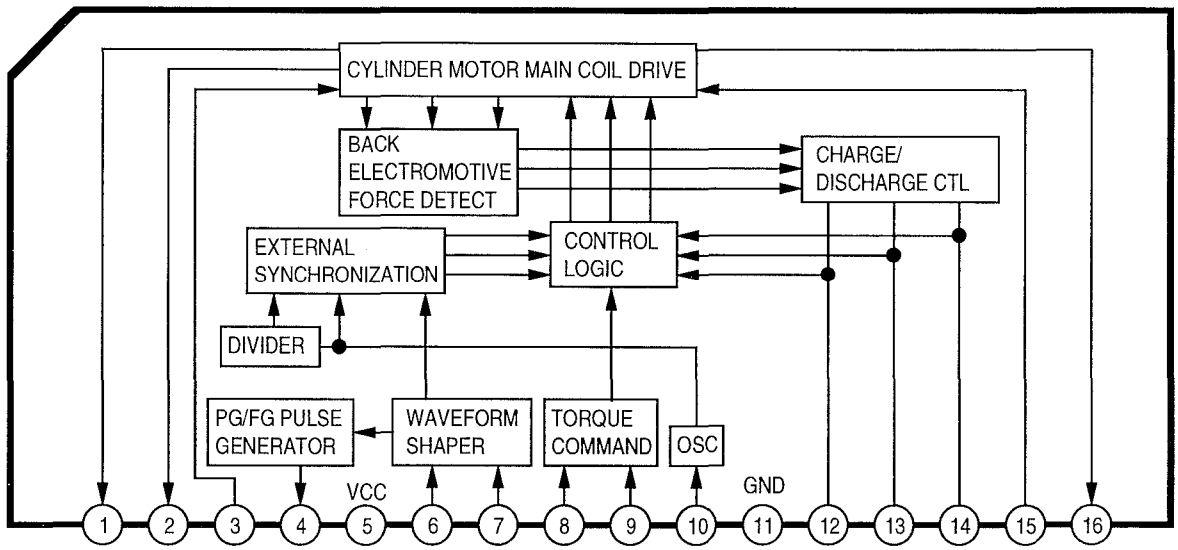
PIN NO. OF IC6001 / MODE	A (96)	B (95)	C (94)
FF/REW	H	H	L
BRAKE	L	H	H
PLAY/CUE/SLOW/STILL	L	H	L
REVIEW	H	L	L
STANDBY/STOP	H	L	H
CASSETTE DOWN	L	L	H
EJECT	L	L	L

0~0.9V	1.0~2.5V	2.6~4.1V	TERMINAL VOLTAGE
CH DOWN	VOLUME DOWN	POWER	OPERATION BUTTON
CH UP	VOLUME UP	---------	
PLAY /REPEAT	FF/CUE	---------	
STOP /EJECT	REC/TIME	REW/REV	

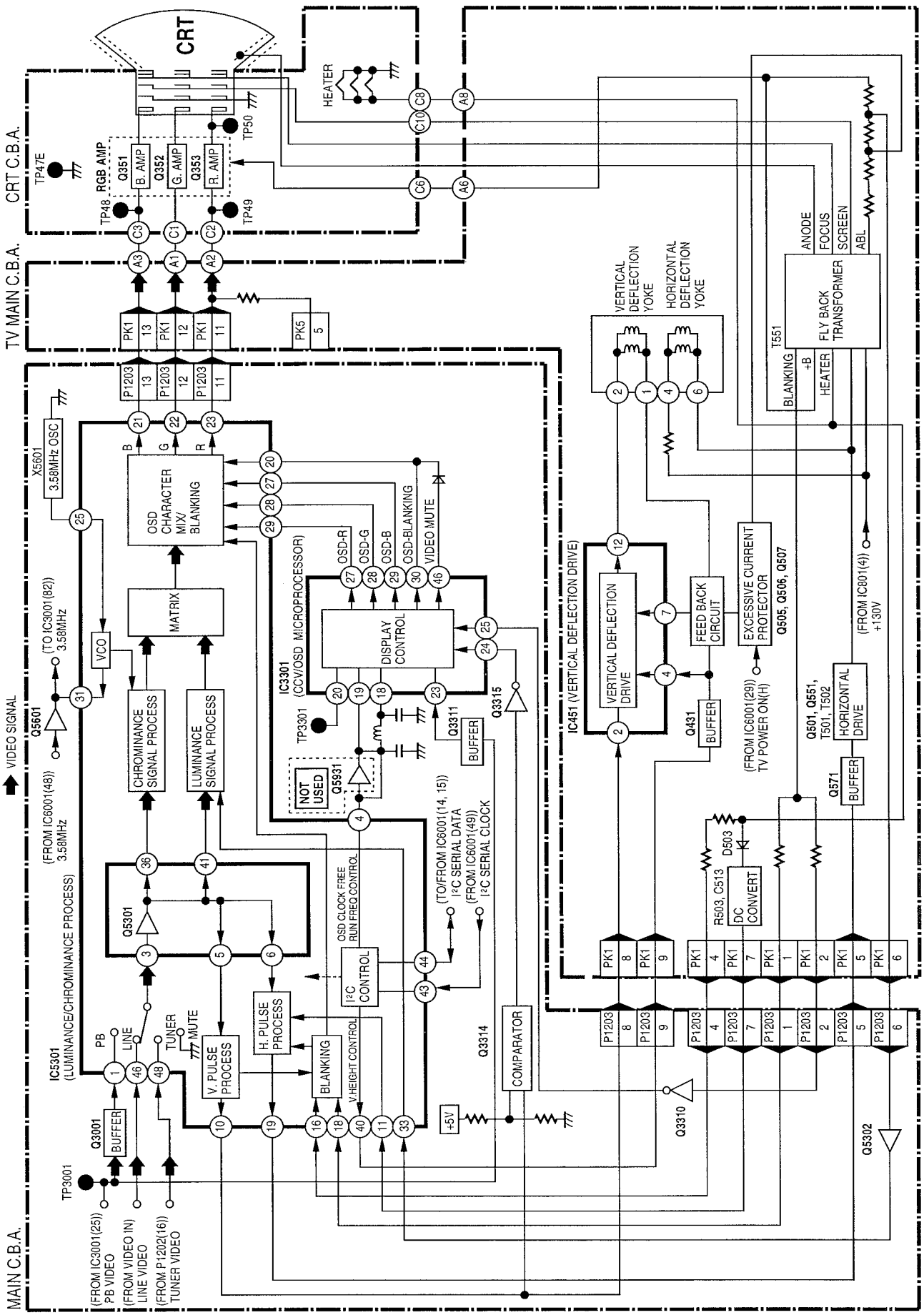
SERVO BLOCK DIAGRAM



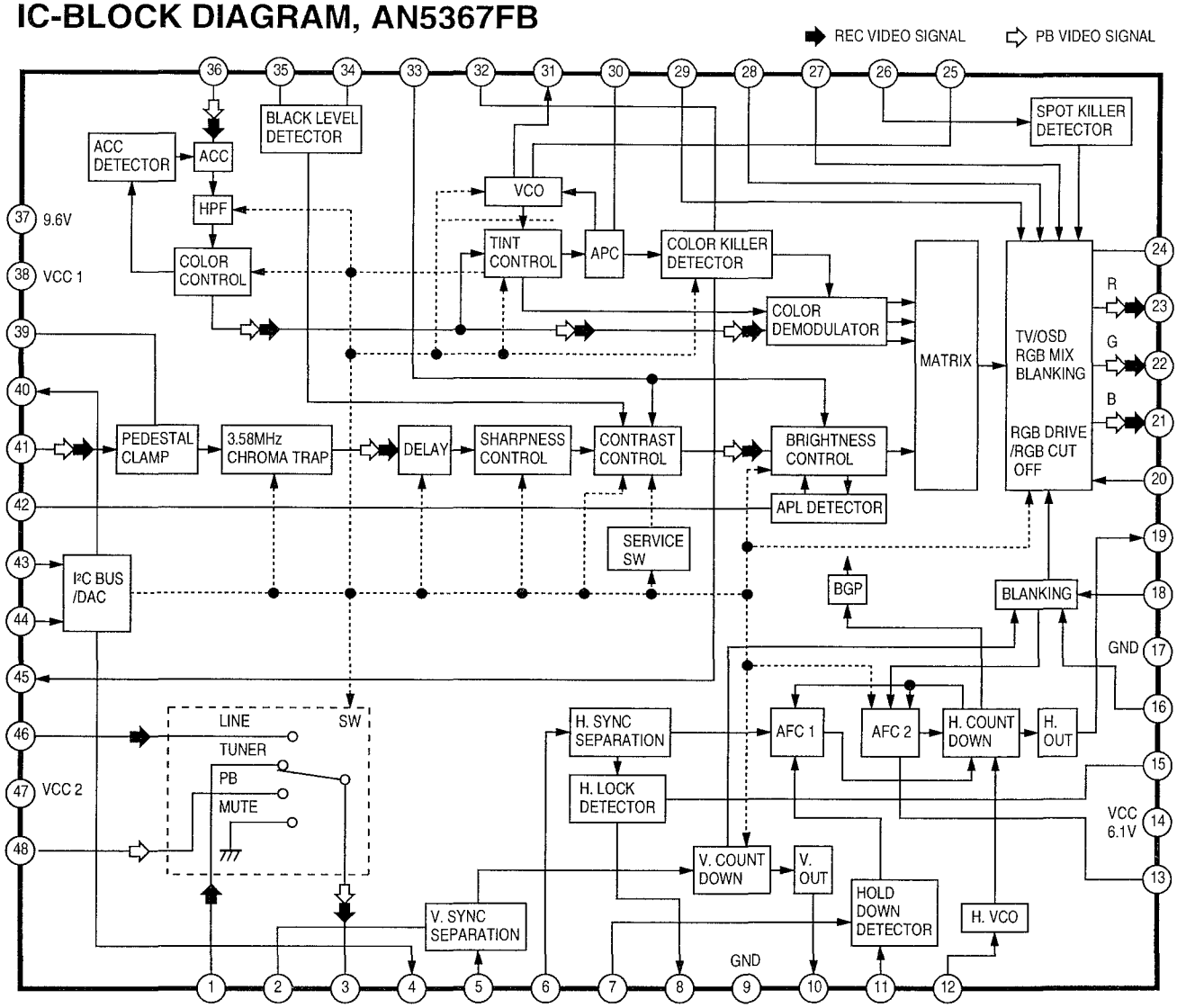
IC2601 CYLINDER MOTOR DRIVE IC-BLOCK DIAGRAM, AN3809K



TV Y/C PROCESS/OSD/CCV/TV MAIN BLOCK DIAGRAM



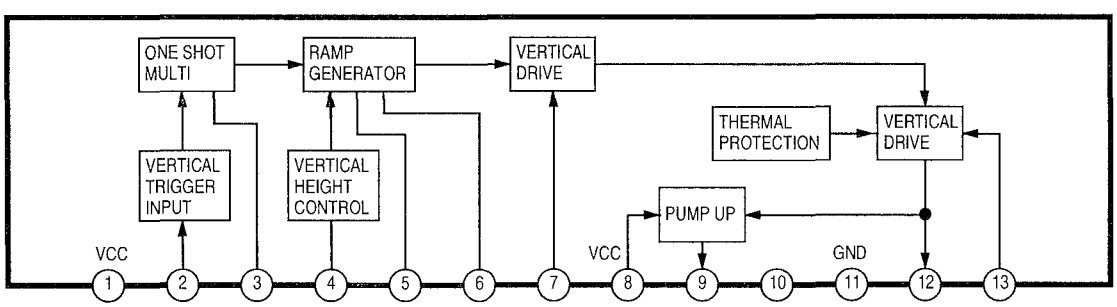
IC5301 LUMINANCE/CHROMINANCE PROCESS IC-BLOCK DIAGRAM, AN5367FB



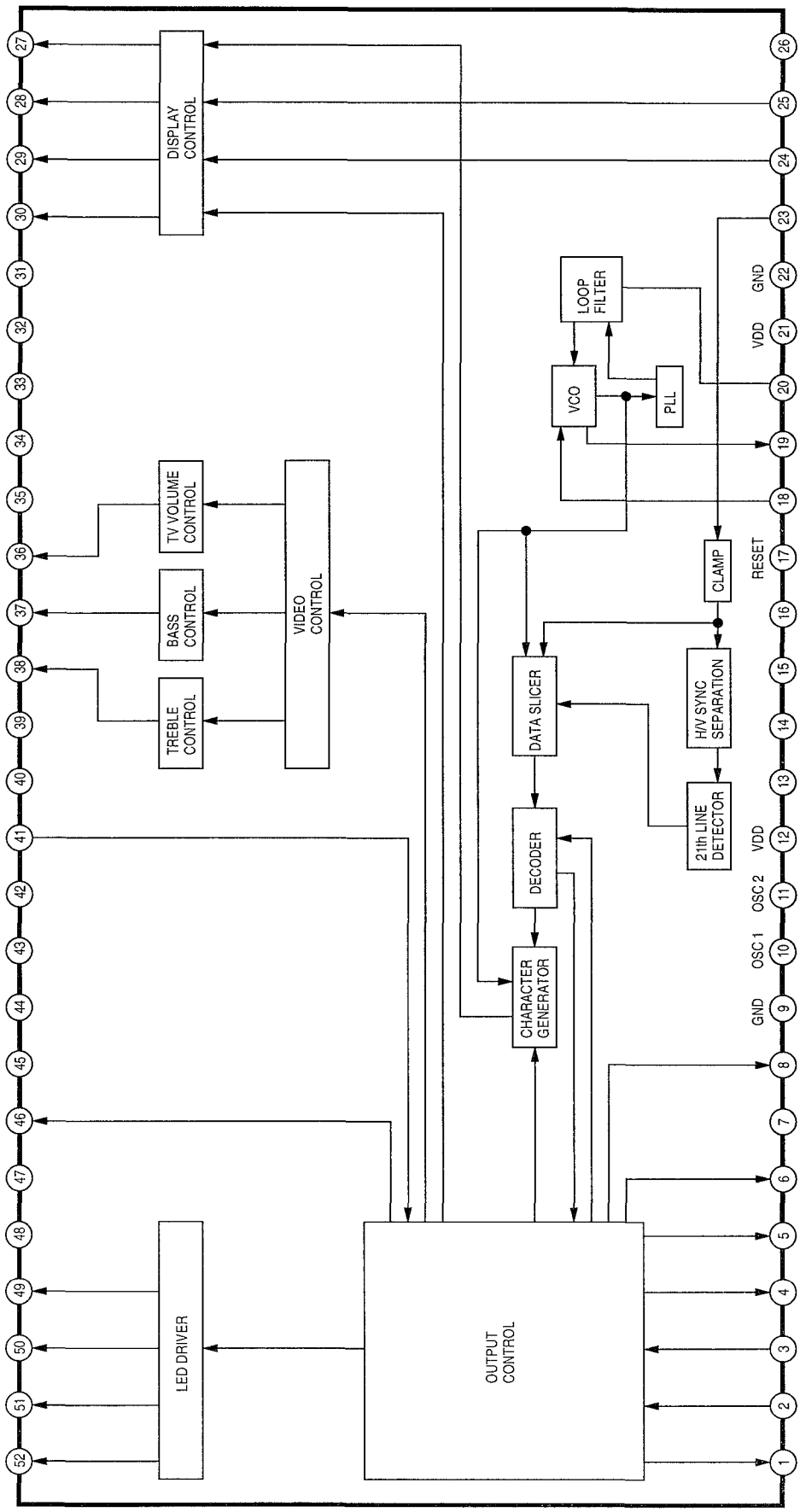
THE FOLLOWING CONTROL FUNCTIONS ARE ADJUSTED BY USING I²C BUS .

SUB COLOR
SUB TINT
SUB BRIGHT
SUB SHARPNESS
R CUT-OFF
G CUT-OFF
B CUT-OFF
G DRIVE
B DRIVE
SUB CONTRAST
H CENTER
V SIZE

IC451 VERTICAL DEFLECTION DRIVE IC-BLOCK DIAGRAM, LA7837

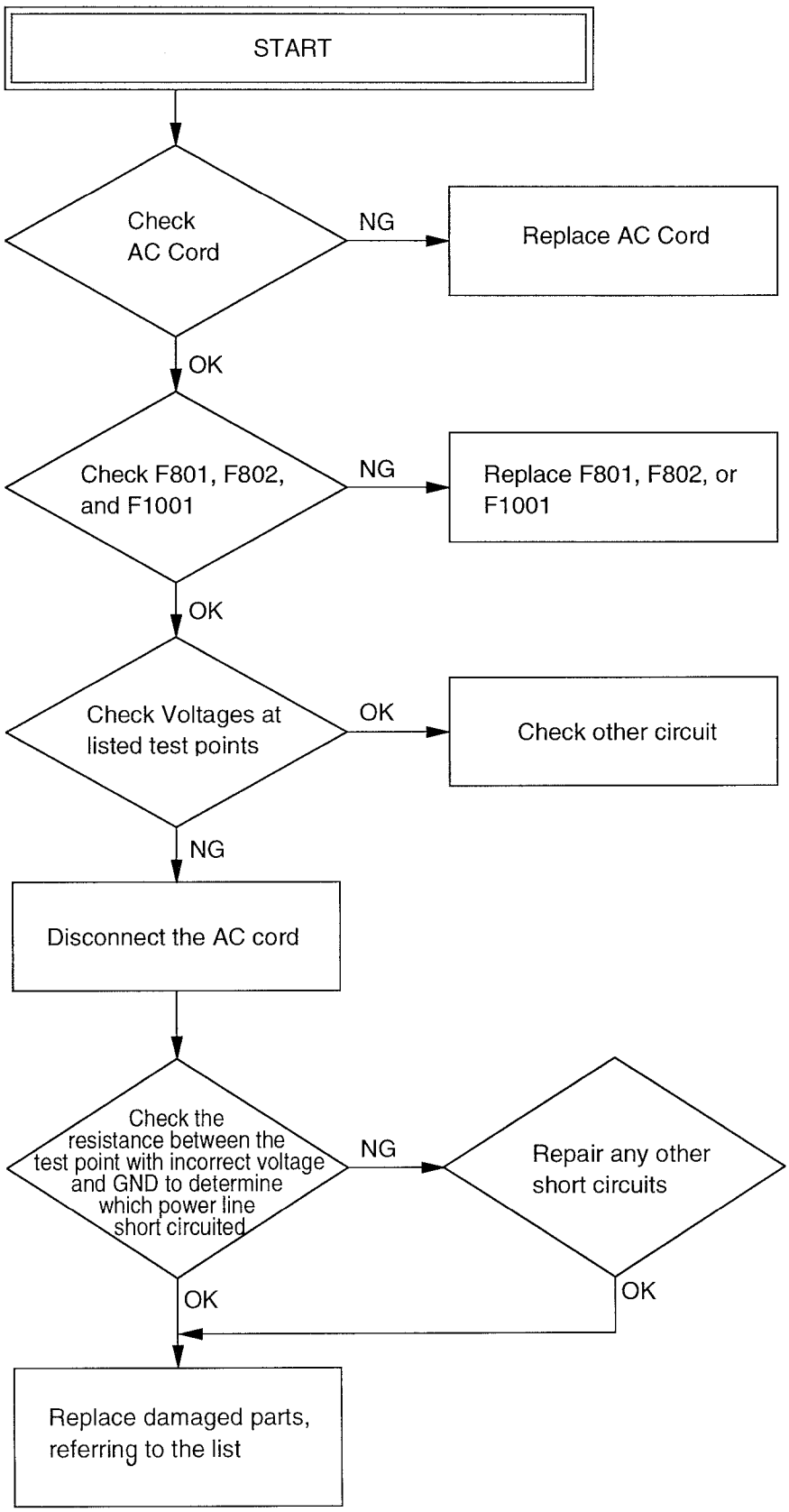


IC3301 8BIT MICRO PROCESSOR OSD/CCV
IC-BLOCK DIAGRAM, LC8643125F90



TROUBLESHOOTING HINTS

Power Supply Section



Voltage and Resistance of Power Line

Test Points (Main C.B.A.)	Voltage	Resistance
TP1052 (DC+37V)	36.5V	More than 500 ohm
TP1053 (DC+14V)	13.5V	More than 30 ohm
C1014(negative side) (DC-30V)	-30.7V	More than 500 ohm
TP1055 (DC+5V)	5.2V	More than 25 ohm
Q1005(collector) (Power Down (L))	5.2V	More than 500 ohm
TP1058 (DC+12V)	12.0V	More than 30 ohm

VOLTAGE: STOP mode under normal conditions.
RESISTANCE: Between Test points and GND with power off under normal conditions.
Note: The Voltages and Resistance listed are approximate.

When power line is short circuited, check the following parts. Replace if necessary.

(1). SHORT CIRCUIT AND REPLACEMENT PARTS ON POWER LINE.

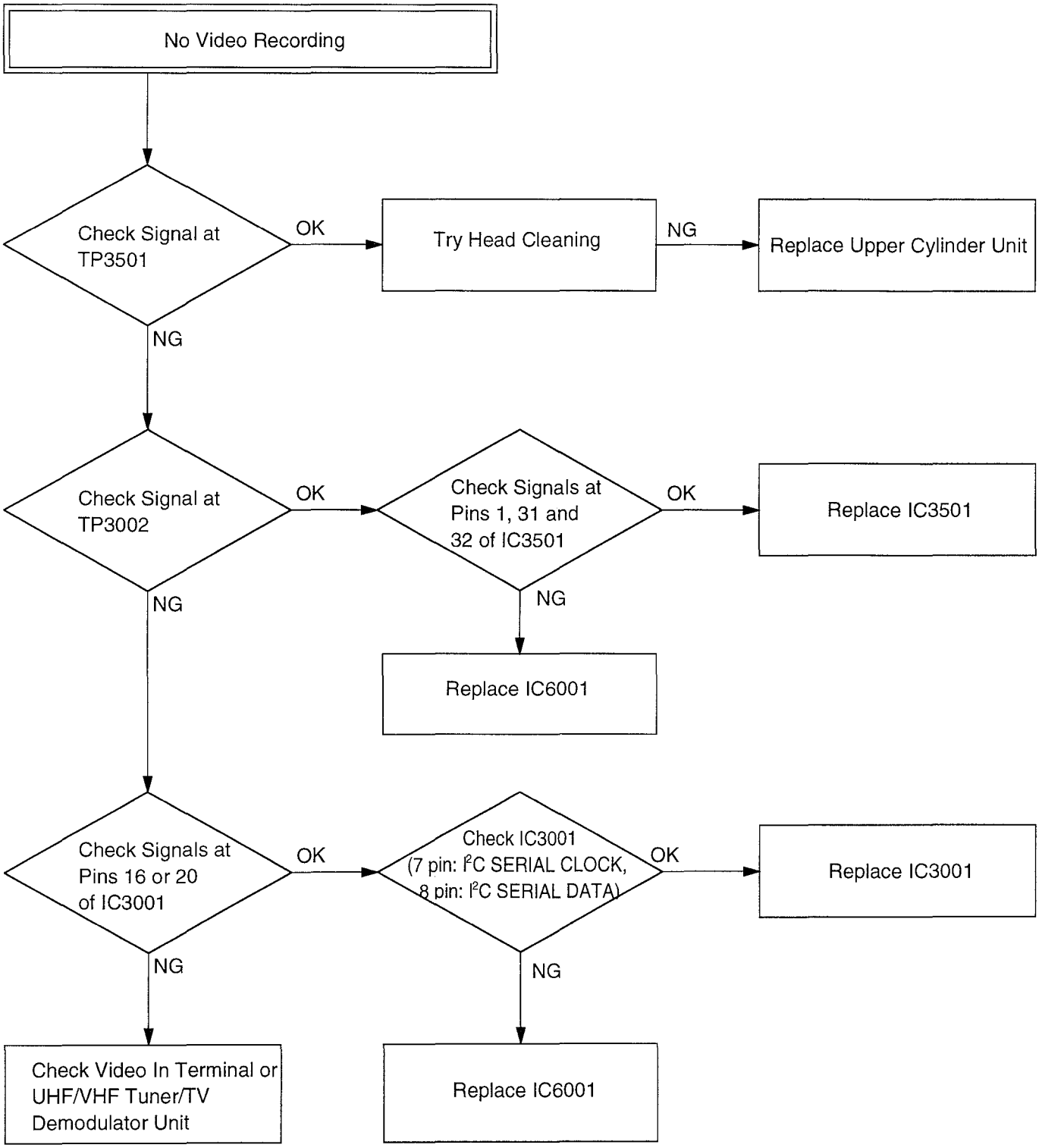
	CONDITION OF SHORT CIRCUIT	DAMAGEABLE PARTS BY SHORT CIRCUIT
(1)	5V ➡ GND	*PR1001, *D1008, Q1005
(2)	37V ➡ GND	*D1005, *R1010
(3)	14V ➡ GND 12V ➡ GND	D1006, *D1015, Q1051, *Q1052 D1051, D1052, D1053, *PR1050, *PR1054
(4)	-30V ➡ GND	*R1011, *D1007,
(5)	37V ➡ 14V	D1006, *D1015, Q1051, *Q1052 D1051, D1052, D1053, *PR1050, *PR1054
(6)	-30V ➡ 5V	REPLACE THE ALL OF PARTS OF (1) AND (4)
(7)	14V ➡ 12V	*Q1051, *Q1052, D1051, D1052, D1053, *PR1050, *PR1054
(8)	37V ➡ POWER DOWN(L)	*Q1005, D1005, R1010

*NOTE1: When a short circuit occurs supplying the Power for a long time will cause the fuse to blow.
*NOTE2: Parts with mark are the most susceptible to damage in case of short circuit. Please check them first.

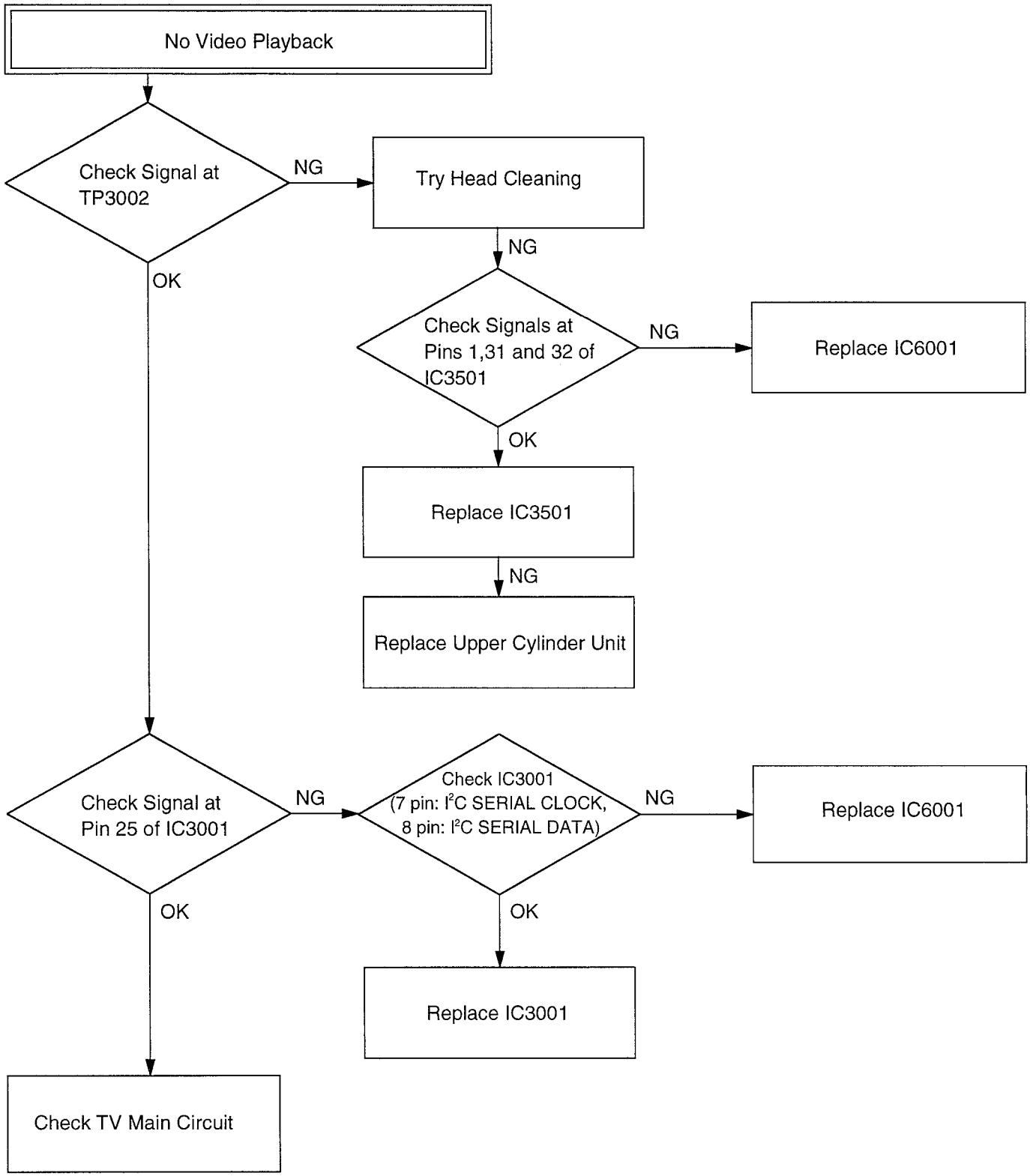
(2). IN CASE OF FUSE(F1001) BLOW.
Replace Parts F1001, Q1001, Q1002, D1001(very rarely has problems), C1016, C1028, D1015.
Cause ➡ It may be caused by a short circuit of 5V or 14V.

(3). JUST AFTER TURNING POWER ON, ABNORMAL NOISE CAN BE HEARD FROM POWER SUPPLY CIRCUIT.
Replace Parts D1015, D1008, D1007, R1011, C1016.
Cause ➡ It may be caused by a short circuit of 5V, -30V, 14V.
In this condition, supplying the Power for a long time will causes the fuse to blow.

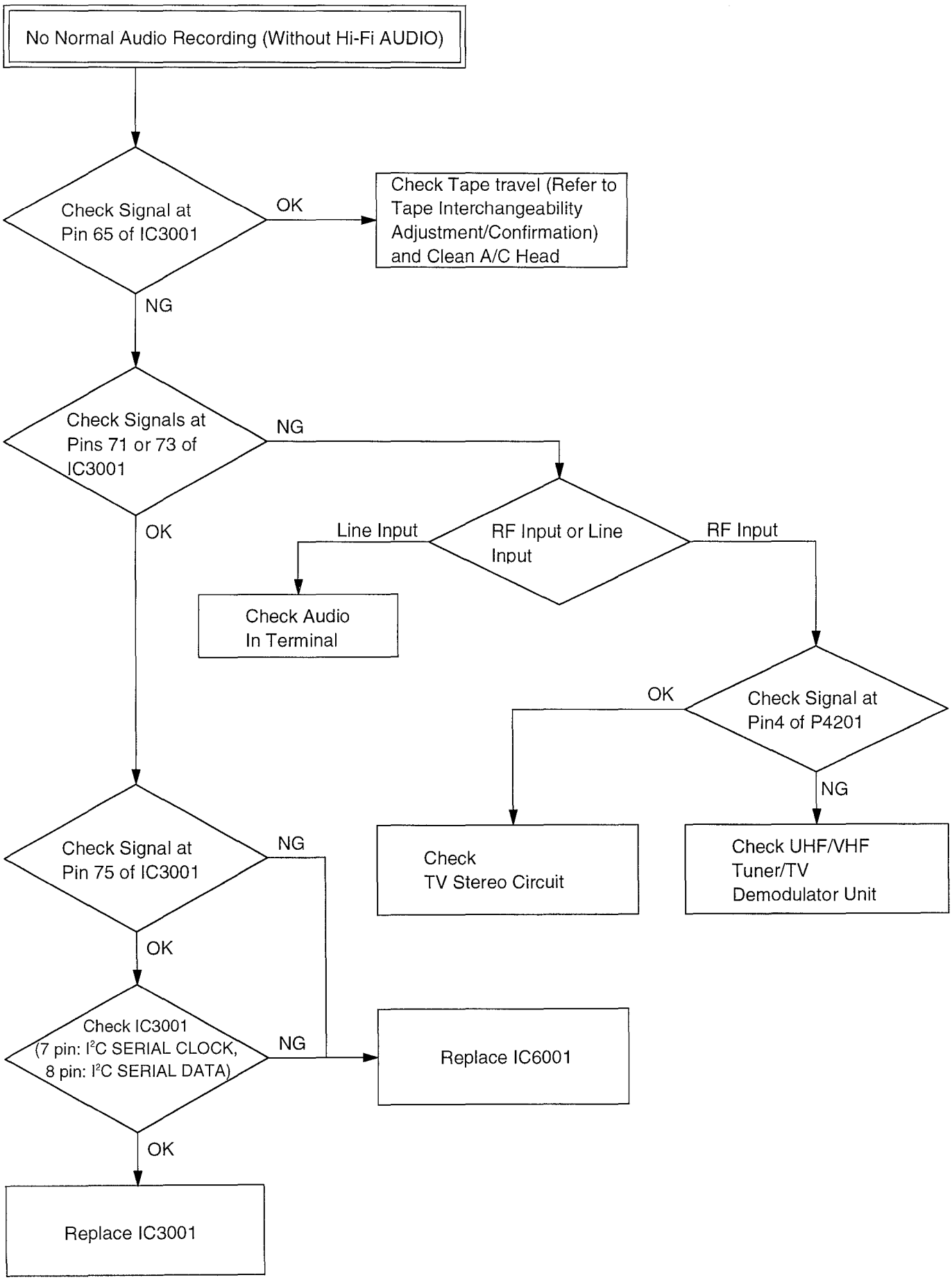
Video Section



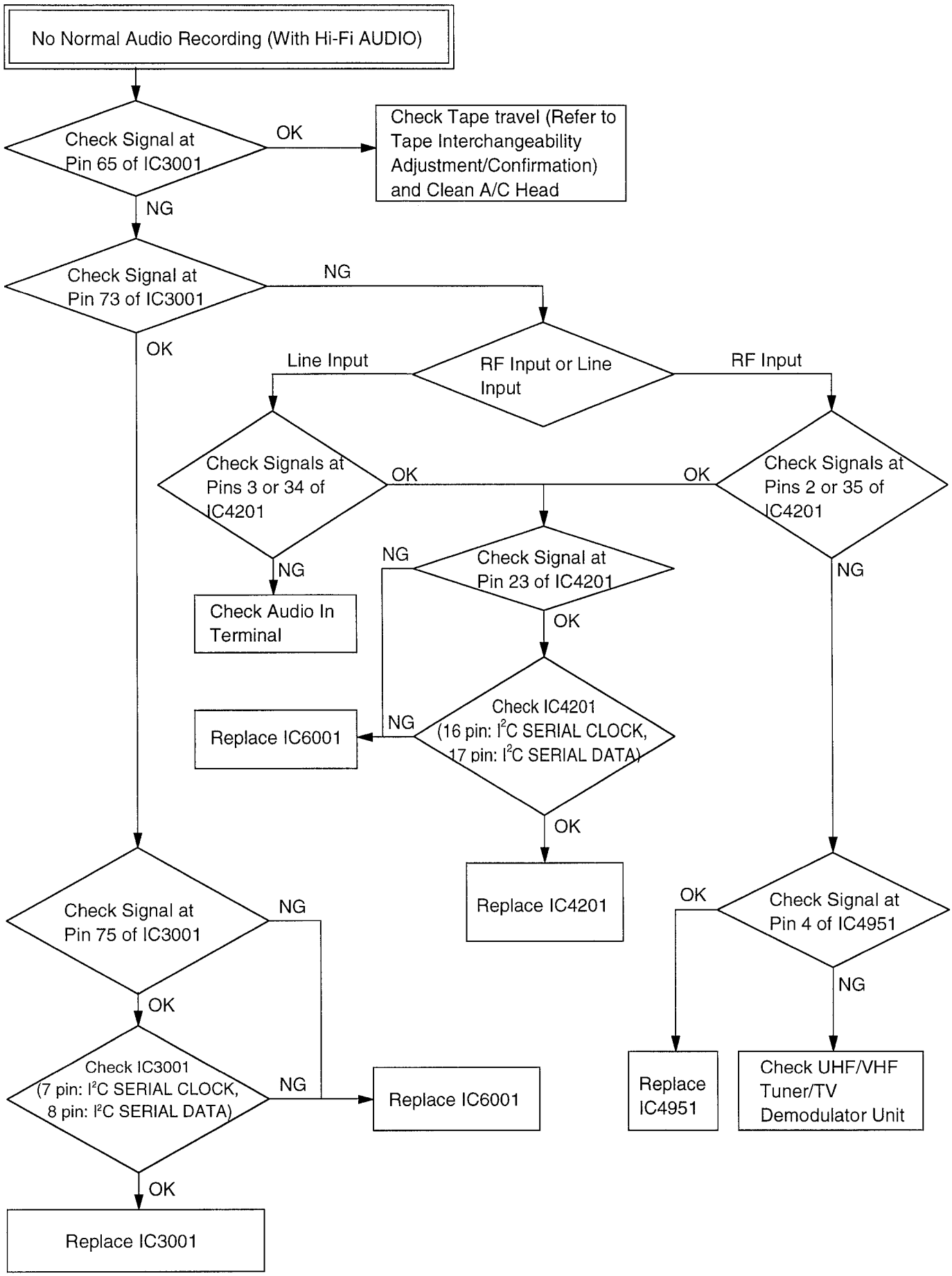
Video Section



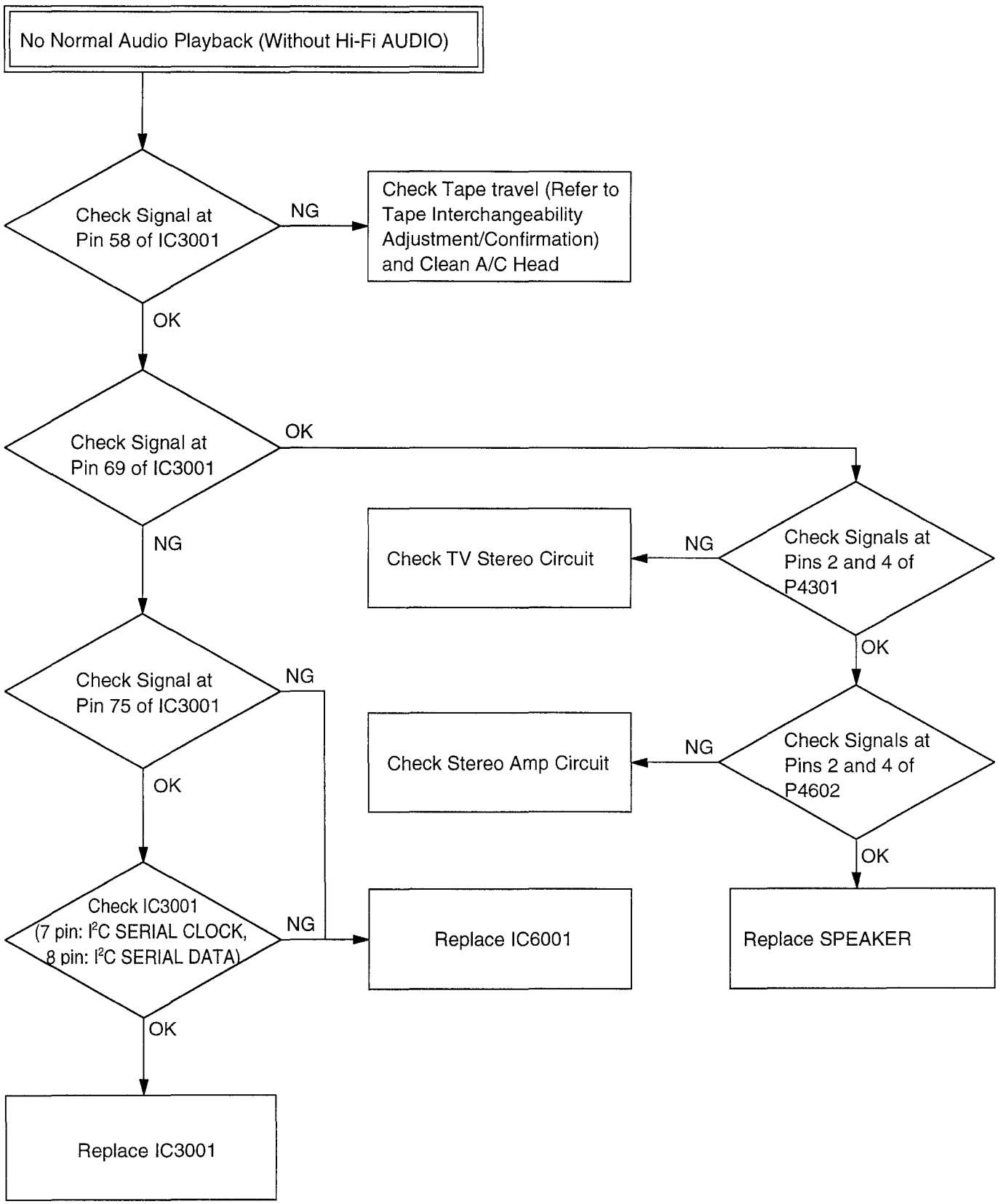
Audio Section



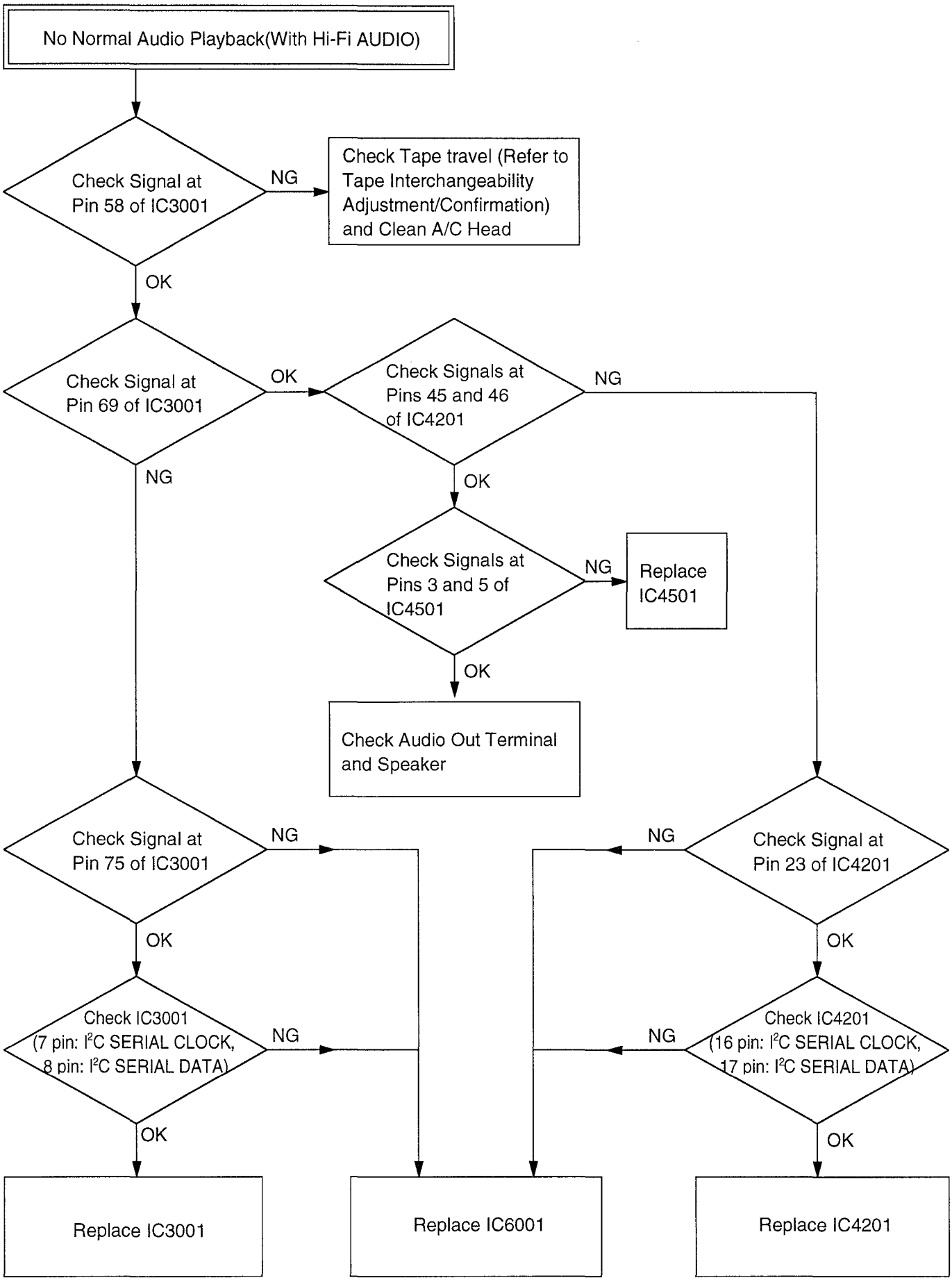
Audio Section



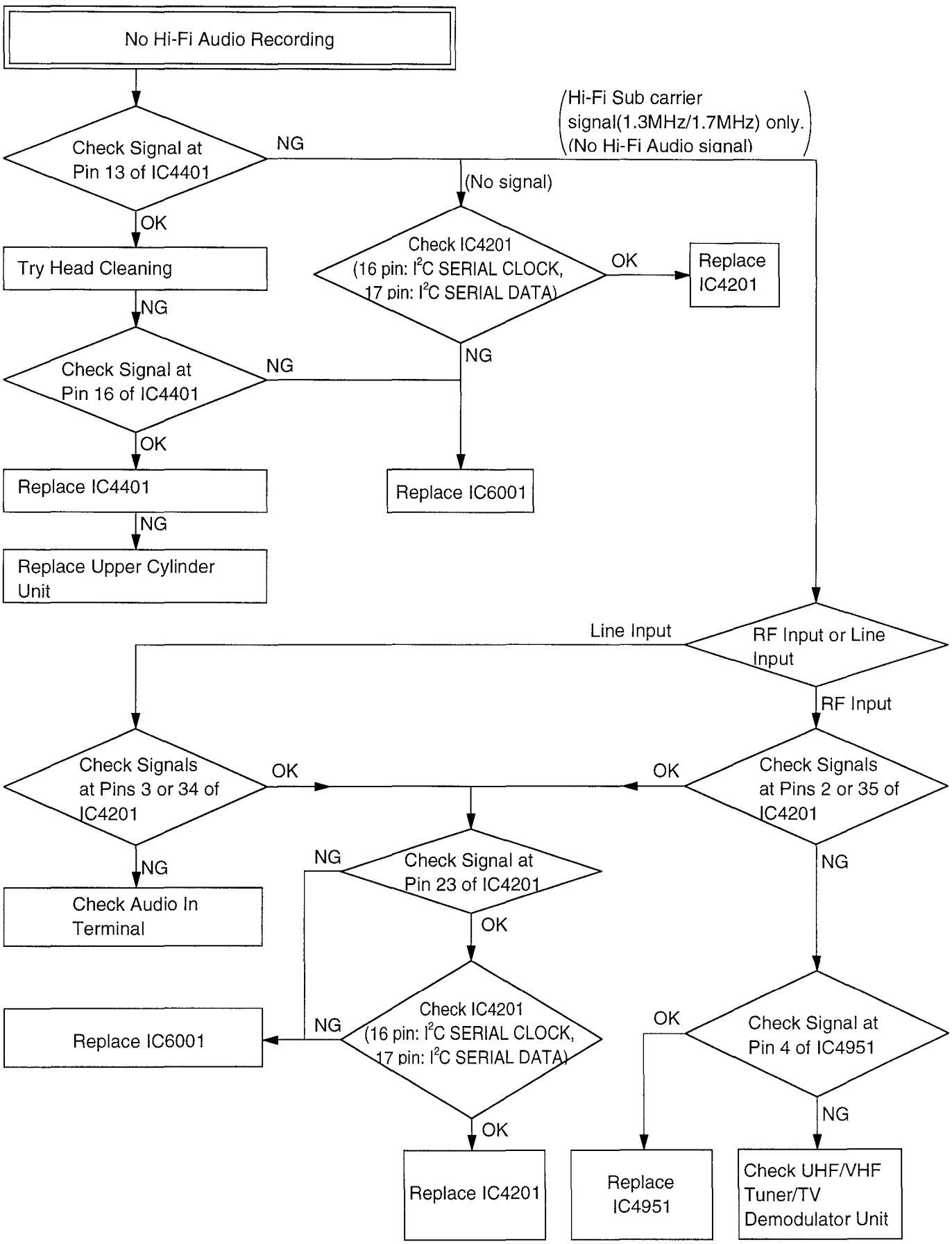
Audio Section



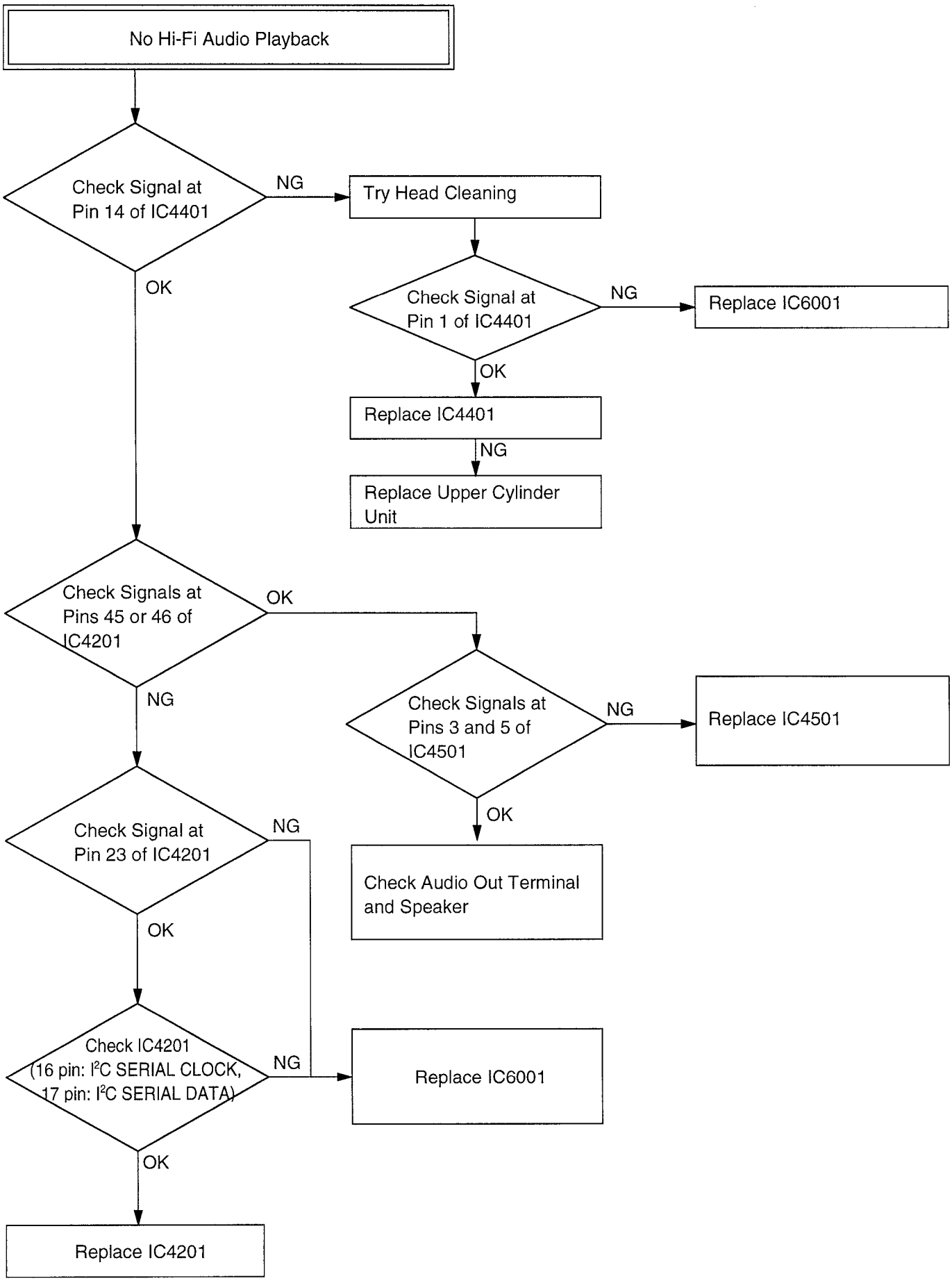
Audio Section



Hi-Fi Audio Section



Hi-Fi Audio Section



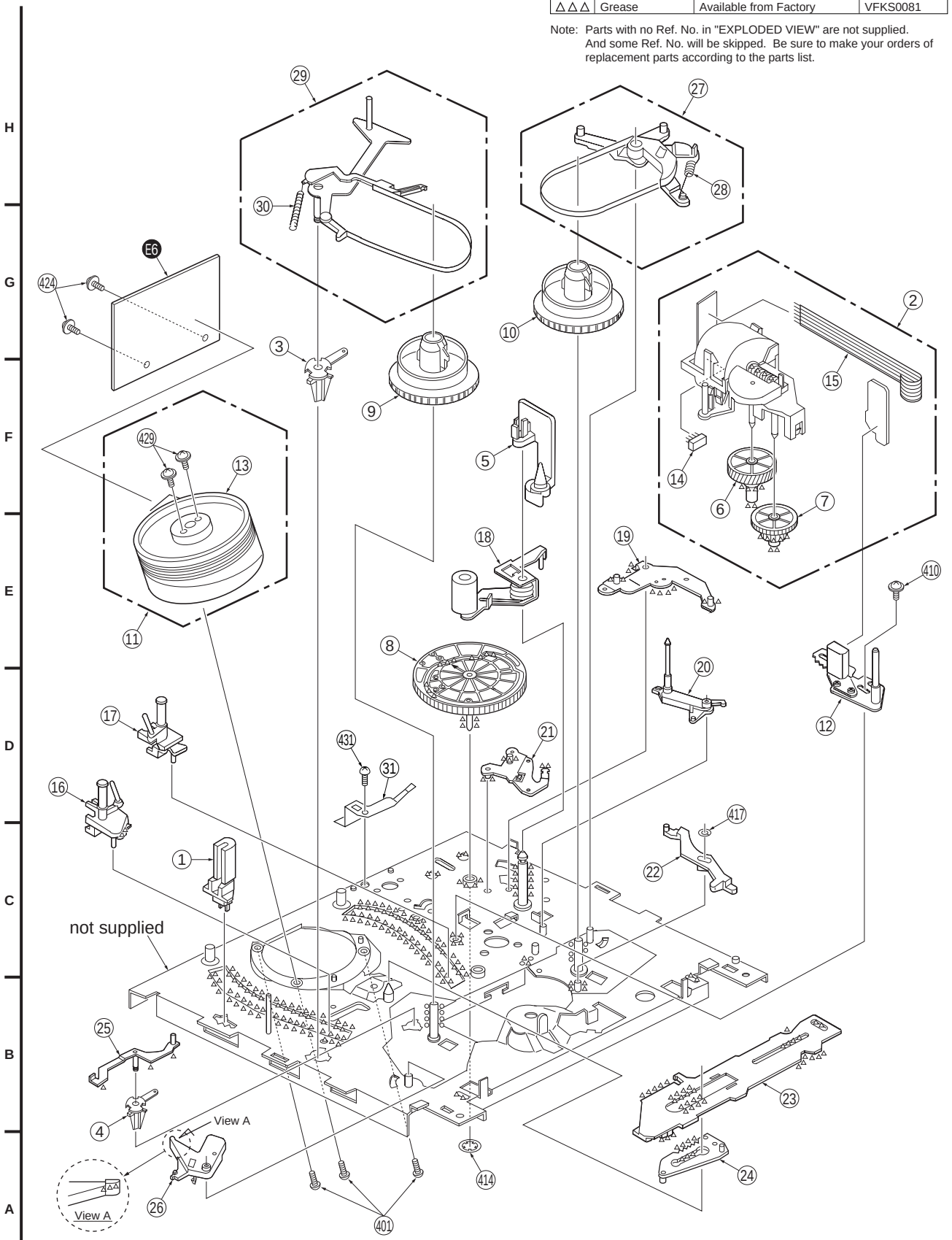
EXPLODED VIEWS

❶ MECHANISM (TOP) SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
×××	Silicon Grease	Available from Factory	VFK1301
○○○	Spindle Oil	Purchase from Local Supplier	- - - - - - - -
△△△	Grease	Available from Factory	VFKS0081

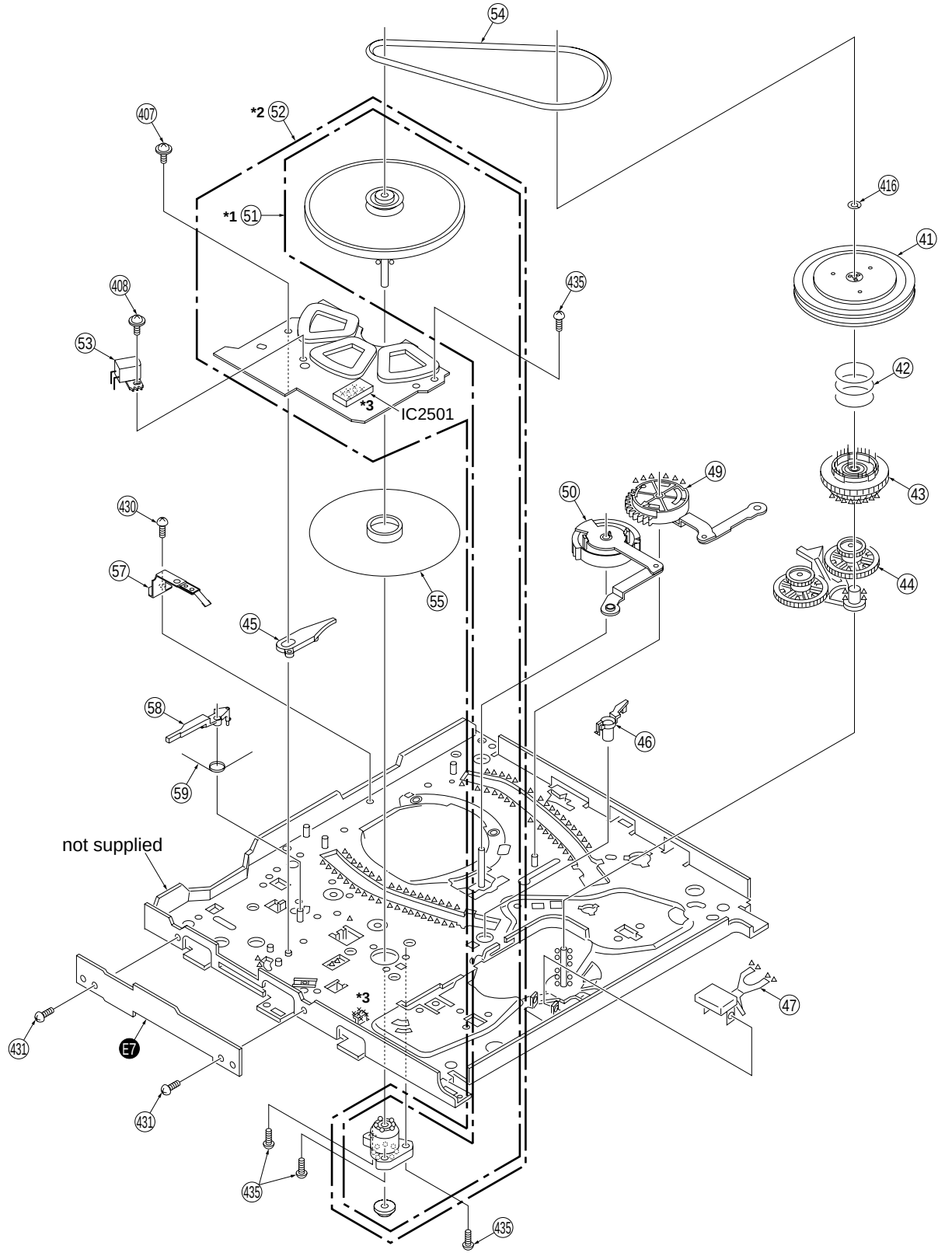
Note: Parts with no Ref. No. in "EXPLODED VIEW" are not supplied.
And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.



❷ MECHANISM (BOTTOM) SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
×××	Silicon Grease	Available from Factory	VFK1301
○○○	Spindle Oil	Purchase from Local Supplier	- - - - - - - -
△△△	Grease	Available from Factory	VFKS0081

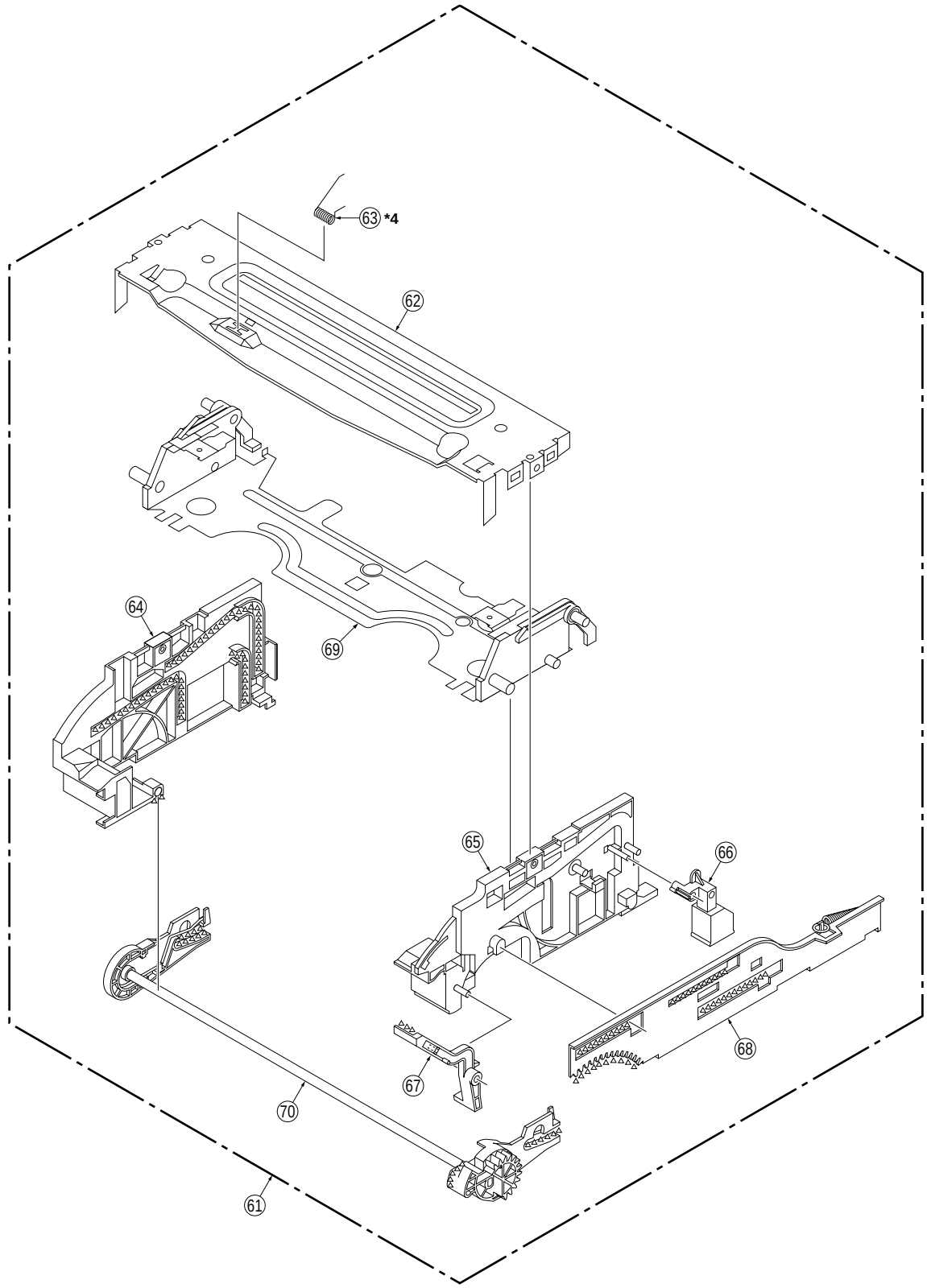


***1**: Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Rotor Kit only.
***2**: Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit only.
However, IC2501 (AN3845SC) is available separately as a replacement part.
***3**: When installing the IC2501 or Capstan Stator Unit, be sure to apply Silicon Grease (VFK1301).
Refer to "Capstan Stator Unit" of "Disassembly/Assembly Procedures of Mechanism" section for more information.

❸ CASSETTE UP COMPARTMENT SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

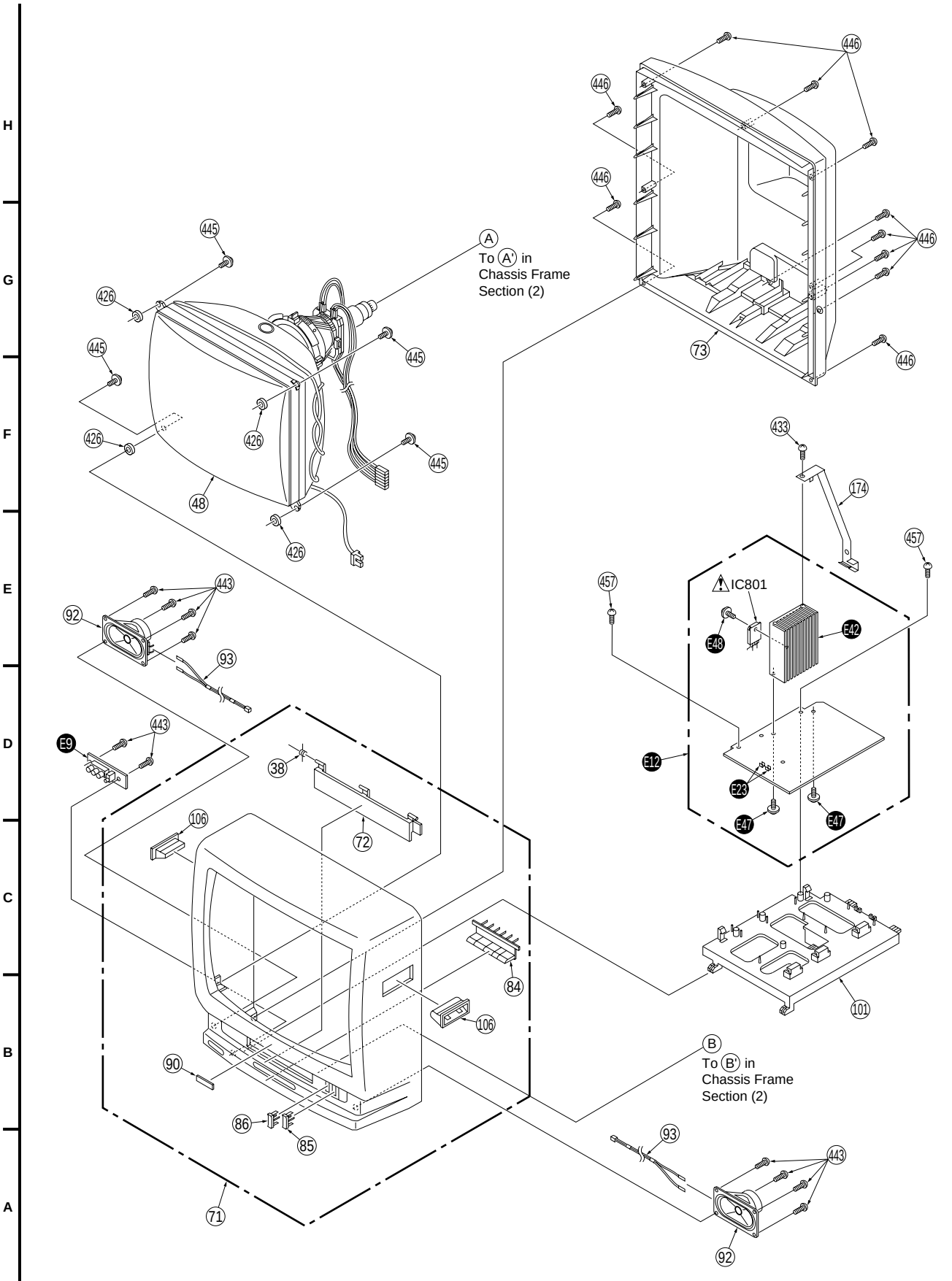
Mark	Kind of Lubricant	Availability	Part Number
×××	Silicon Grease	Available from Factory	VFK1301
○○○	Spindle Oil	Purchase from Local Supplier	- - - - - - - -
△△△	Grease	Available from Factory	VFKS0081



***4**: As an ESD Countermeasure, the spring should be installed in the proper position.
Please refer to Disassembly/Assembly Procedure of Mechanical Section for more information.

❹ CHASSIS FRAME SECTION (1)

IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

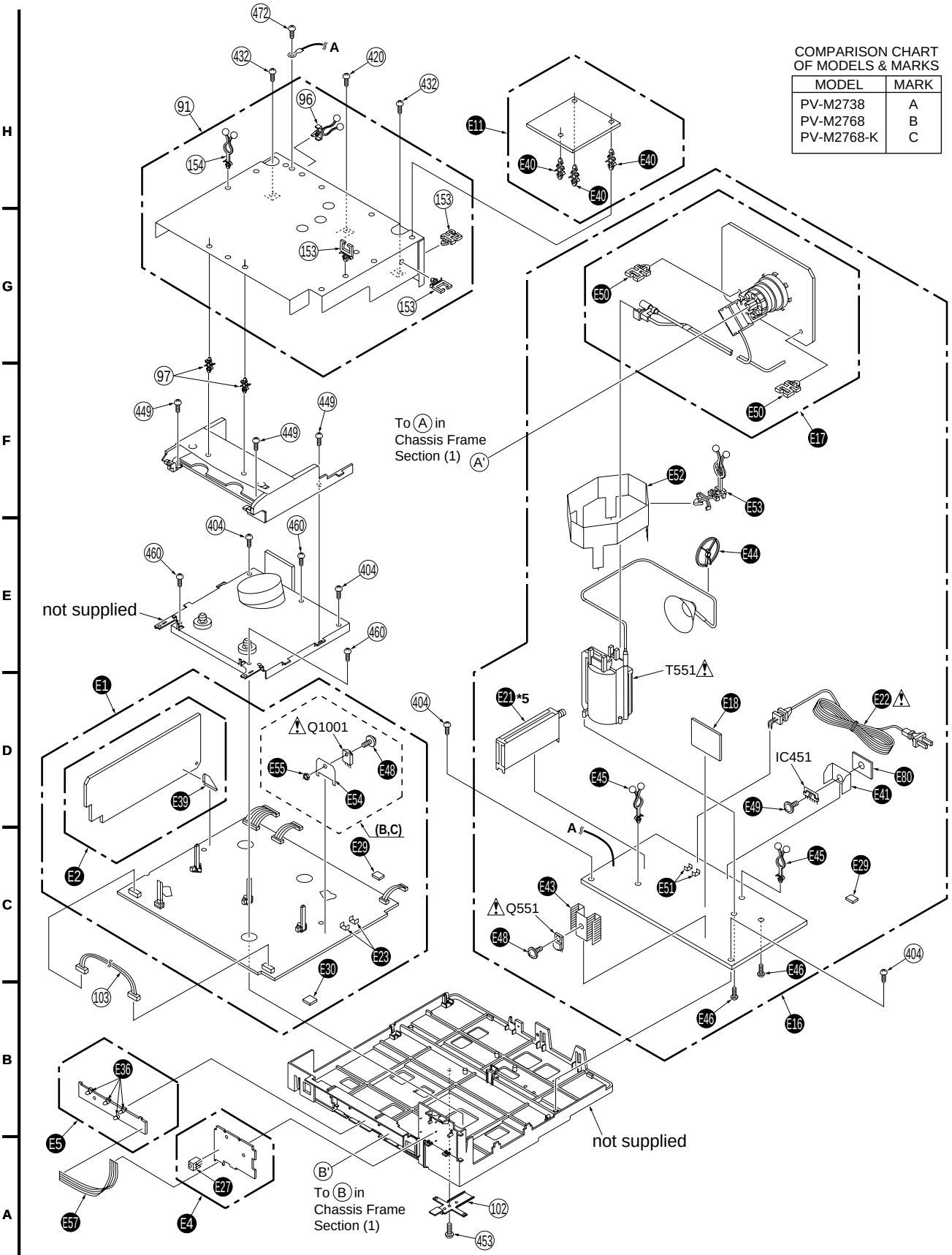


❺ CHASSIS FRAME SECTION (2)

IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

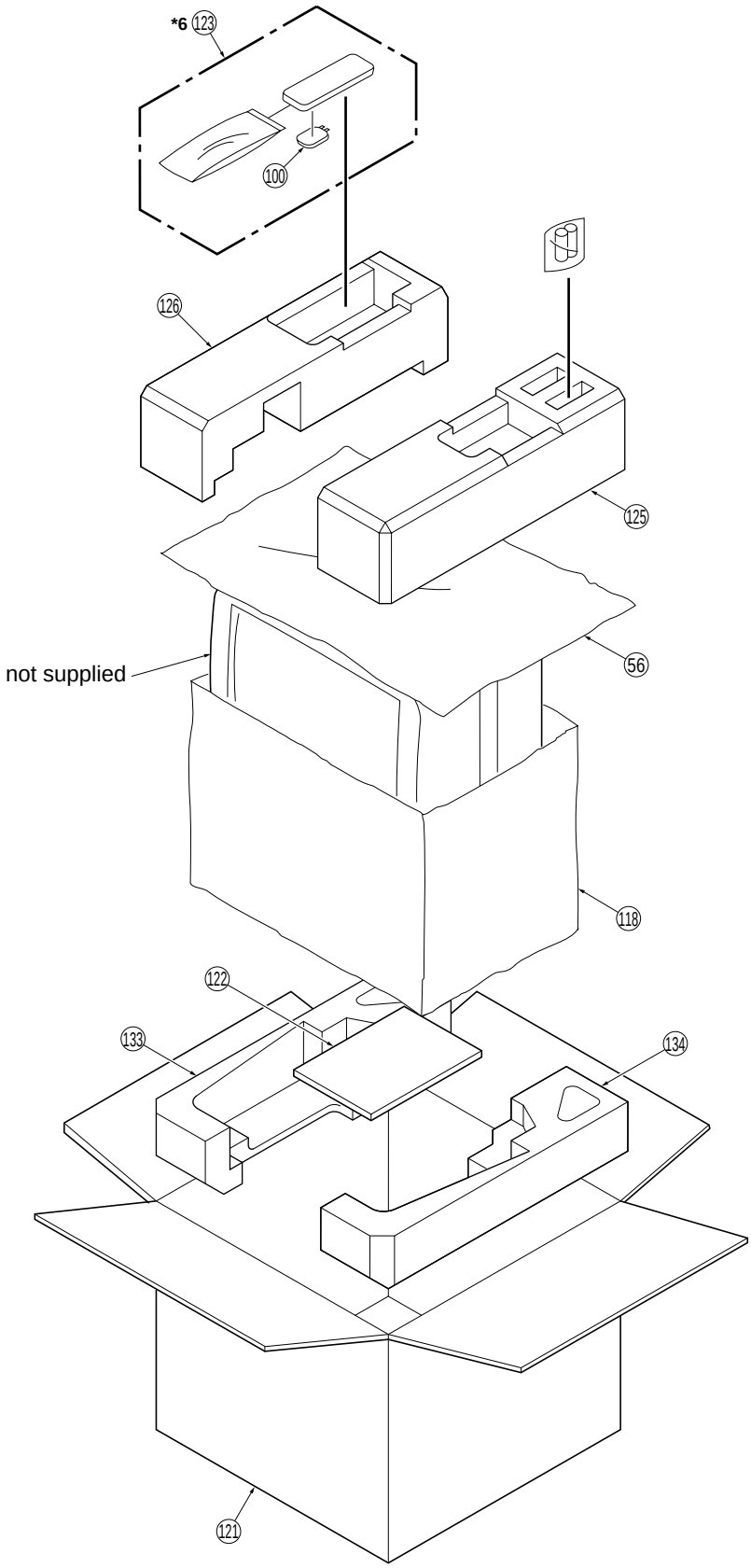
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C



***5**: Since the UHF/VHF TUNER/TV DEMODULATOR UNIT has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.

❻ PACKING PARTS AND ACCESSORIES SECTION



***6**: The Infrared Remote Control Unit replacement part is available as a complete assembly unit only.
Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.

REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

REPLACEMENT NOTES

General Notes

1. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.
2. **IMPORTANT SAFETY NOTICE**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.
3. SPECIAL NOTE
   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.
4. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.
6. The parts which "AKEI" is indicated in Remarks column will be supplied from AKEI factory.

Mechanical Replacement Notes

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.
2. Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as Capstan Rotor Kit (Ref. No. 51) only.
3. Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit (Ref. No. 52) only. However, IC2501 (AN3845SC) is available separately as a replacement part. When installing the IC2501 or Capstan Stator unit, be sure to apply Silicon Grease (VFK1301). Refer to "Capstan Stator Unit" of "DISASSEMBLY/ASSEMBLY PROCEDURES OF MECHANISM" section.
4. Since the UHF/VHF TUNER/TV DEMODULATOR UNIT (Ref. No. E21) has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.
5. The Infrared Remote Control Unit (Ref. No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.
6. Cut Washers (Ref. No. 417 and 441) are not reusable. If removed, install a new one.
7. Main Cam Push Nut (Ref. No. 414) is not reusable. If removed, install a new one.

Electrical Replacement Notes

1. Item numbers with capital letter E (Example: E1, E2,...) in the Ref. No. column are shown in the exploded views. The E item numbers are also printed on the same page at the top of the column.
2. The parts with "■" mark are supplied individually or as a unit. The parts with "▲" mark are supplied individually or as a unit, and are included in "■" parts listed directly above in the parts list.
3. Unless otherwise specified;
   All resistors are in ohms, 1/4W, +/-5%, carbon,
   K = 1,000 ohm, M = 1,000 kohm.
   All capacitors are in microfarads, P = micromicrofarad, +/-10%.
   All coils are in microhenries, M = 1,000 microhenry, +/-10%.
4. Abbreviation
   RTL: Retention Time Limited
   This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.
   NR: Non Repairable Board Ass'y
   MGF CHIP: Metal Glaze Film Chip
   C CHIP: Ceramic Chip
   COMPLX CMP: Complex Component
   W FLMPRF: Wirewound Flameproof
   C.B.A.: Circuit Board Assembly
   P.C.B.: Printed Circuit Board
   E.S.D.: Electrostatically Sensitive Devices
5. SERVICE OF CHIP PARTS
   When servicing chip parts, please use a soldering iron of less than 30 watts. Refer to "IC, TRANSISTOR AND CHIP PART INFORMATION" page.
6. The parts with "●" are 0 ohm resistor. When replacing, a wire can be substituted for a 0 ohm resistor.

COMPARISON CHART OF MODELS & MARKS

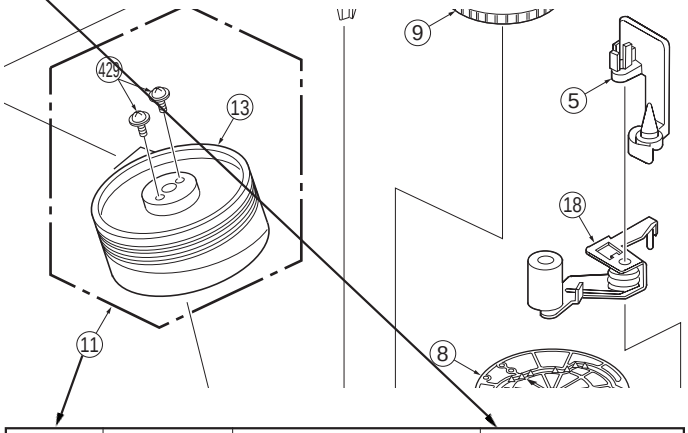
MODEL	MARK
PV-M2738	A
PV-M2768	B
PV-M2768-K	C

MECHANICAL REPLACEMENT PARTS LIST

<The complete Exploded Views are shown in this manual.>

EXPLODED VIEWS

❶ MECHANISM (TOP) SECTION



Ref. No.	Part No.	Part Name	Remarks
		MECHANISM PARTS ON CHASSIS	
			(Section No.)
1	VBSS0032	FULL ERASE HEAD	1
2	VXKS0867	MOTOR BLOCK ASS'Y	1
3	VDBS0349	TENSION ARM BOSS	1
4	VDBS0351	S BRAKE ARM BOSS	1
5	VMDS0971	OPENER PIECE	1
6	VDGS0428	WORM WHEEL GEAR	1
7	VDGS0429	INTERMEDIATE GEAR	1
8	VDGS0430	MAIN CAM GEAR	1
9	VDRS0056	S REEL TABLE	1
10	VDRS0057	T REEL TABLE	1
11		CYLINDER UNIT	
	VEGS0395	(A)	1
	VEGS0399	(B,C)	1
12	VEHS0559	AUDIO CONTROL HEAD UNIT	1 AKEI
13		UPPER CYLINDER UNIT	
	VEHS0560	(A)	1
	VEHS0562	(B,C)	1
14	VJSS0882	CONNECTOR 8P	1
15	VJWS6LB100LL	COMMU CABLE W/OUT PLUG	1
16	VXDS0198	LOADING POST BASE-S UNIT	1
17	VXDS0195	LOADING POST BASE-T UNIT	1
18	VXLS1078	PINCH ARM UNIT	1
19	VMLS0978	MAIN LEVER DRIVE ARM	1
20	VXLS1063	P5 ARM UNIT	1
21	VMLS0976	DRIVE RACK ARM	1
22	VMLS0972	CHANGING LEVER A	1
23	VMLS0977	MAIN LEVER	1
24	VXLS1072	LOADING RACK UNIT	1
25	VXLS1061	S BRAKE ARM UNIT	1
26	VMLS0982	S SPRING ARM	1
27	VXLS1062	T BRAKE UNIT	1
28	VMBS1150	T BRAKE SPRING	1
29	VXLS1074	TENSION ARM UNIT	1
30	VMBS1164	TENSION SPRING	1
31	VMCS0078	PCB PLATE	1
38	TES7612	CASSETTE DOOR SPRING	4
41	VXPS0379	CENTER CLUTCH UNIT	2
42	VMBS1151	CHANGING GEAR SPRING	2
43	VDGS0425	CHANGING GEAR	2
44	VXLS1053	IDLER ARM UNIT	2
45	VMDS0985	PCB HOLDER	2
46	VMDS0982	MAIN LEVER GUIDE	2
47	VMLS0973	CHANGING LEVER B	2
48	TXFVB01275	COLOR PICTURE TUBE UNIT	4 AKEI
49	VXLS1054	S LOADING ARM UNIT	2
50	VXLS1056	T LOADING ARM UNIT	2
51	VXPS0382K2	CAPSTAN ROTOR KIT	2
52	VEMS0316K2	CAPSTAN STATOR KIT	2

Ref. No.	Part No.	Part Name	Remarks
53	VBKS0040	FG HEAD	2
54	VDVS0087	CAPSTAN BELT SQUARE,ELASTOMER	2
		2MM	
55	VMAS2135	SUB ROTOR	2
56	TPE794013	SHEET,POLYETHYLENE	6 AKEI
57	VXBS0061	GROUNDING PLATE UNIT	2
58	VXLS1070	SS BRAKE ARM UNIT	2
59	VMBS1155	SS BRAKE SPRING	2
61	VXYS1172	CASSETTE UP ASS'Y	3
62	VMAS2131	TOP PLATE	3
63	VMBS1159	GROUNDING SPRING	3
64	VMDS0976	SIDE PLATE L	3
65	VMDS0974	SIDE PLATE R	3
66	VMDS0979	SENSOR COVER	3
67	VMLS0987	OPENER LEVER	3
68	VXLS1064	DRIVE RACK UNIT	3
69	VXAS4404	HOLDER UNIT	3
70	VXLS1065	WIPER ARM UNIT	3
71		FRONT CABINET ASS'Y	
	TXFKY1278SP	(A)	4 AKEI
	TXFKY1278HGP	(B,C)	4 AKEI
72		CASSETTE DOOR-LID UNIT	
	TXFKK1277SP	(A)	4 AKEI
	TXFKK1277HGP	(B,C)	4 AKEI
73		REAR COVER UNIT	
	TXFKU01277	(A)	4 AKEI
	TXFKU02276	(B)	4 AKEI
	TXFKU02277	(C)	4 AKEI
84	TBX7786904	OPERATION BUTTON	4 AKEI
85	TBX7786002	CHANNEL BUTTON	4 AKEI
86	TBX7786104	VOL BUTTON	4 AKEI
90	TBM153010	BADGE,ABS RESIN	4
91		TOP SHIELD PLATE ASS'Y	
	LXQUS1278HGP	(A,B)	5 AKEI
	LXQUS278HGPK	(C)	5 AKEI
92	LASUSP5902A	SPEAKER	4 AKEI
93	VEKS5534	SPEAKER CORD W/PLUG	4 AKEI
96	TMM7464-1	CLAMPER	5
97	VMXS0869	DOUBLE LOCKING SPACER	5 AKEI
100	VKFS2221	BATTERY COVER	6
101	LML63003A	SUB FRAME	4 AKEI
102	LUL61001A	FRAME ANGLE	5 AKEI
103	VEKS5580	CONNECTOR CORD W/PLUG	4 AKEI
106	TKK778205-3	HANDLE	4 AKEI
118	TPE744037	BAG,POLYETHYLENE	6 AKEI
121		PACKING CASE,PAPER	
	TPC7841816	(A)	6 AKEI
	TPC7841817	(B)	6 AKEI
	TPC7841818	(C)	6 AKEI
122		FAN BAG	
	VQFS3440	(A)	6 AKEI
	VQFS3441	(B)	6 AKEI
	VQFS3445	(C)	6 AKEI
123		INFRARED REMOTE CONTROL UNIT	
	VSQS1501	(A)	6 AKEI
	VSQS1483	(B,C)	6 AKEI
125	TPD971049	TOP CUSHION RIGHT,STYROFOAM	6 AKEI
126	TPD971050	TOP CUSHION LEFT,STYROFOAM	6 AKEI
133	TPD972050	BOTTOM CUSHION LEFT,STYROFOAM	6 AKEI
134	TPD972049	BOTTOM CUSHION RIGHT,STYROFOAM	6 AKEI
153	TMM77412	CLAMPER	5 AKEI
154	TMM77413	CLAMPER	5 AKEI
174	TUX77115	HEAT SINK SUPPORT ANGLE	4 AKEI

Ref. No.	Part No.	Part Name	Remarks
		SCREWS AND WASHERS	
401	VHDS0475	SCREW,STEEL	1
404	VHDS0472	SCREW,STEEL	4
407	XYN26+C5	SCREW W/WASHER,STEEL	2
408	XYN2+J5FZ	SCREW W/WASHER,STEEL	2
410	VHDS0498	SCREW W/WASHER,STEEL	1
414	VHNS0070	MAIN CAM PUSH NUT,STEEL	1
417	VMXS0924	CUT WASHER,NYLON	1
420	XYC3+FG10FR	SCREW W/WASHER,STEEL	5
424	XYC26+SF6J	SCREW W/WASHER,STEEL	1
426	TMM77532	CUSHION,RUBBER	4
429	VHDS0491	SCREW W/WASHER,STEEL	1
430	XTV26+6FFZJ	TAPPING SCREW,STEEL	2
431	XTV26+6FJ	TAPPING SCREW,STEEL	1,2
432	XTV3+8JR	TAPPING SCREW,STEEL	5
433	VHDS0446	TAPPING SCREW,STEEL	4 AKEI
435	XSN26+4	SCREW,STEEL	2
441	VMXS0499	CUT WASHER	2
443	XTV4+12A	TAPPING SCREW,STEEL	4
445	LHT60001Y	SCREW W/WASHER,STEEL	4 AKEI
446	XTV4+16A	TAPPING SCREW,STEEL	4 AKEI
449	VHDS0493	TAPPING SCREW,STEEL	5
453	XTV3+8G	TAPPING SCREW,STEEL	5
457	VHDS0445	TAPPING SCREW,STEEL	4 AKEI
460	XTN4+12A	TAPPING SCREW,STEEL	5
472	VHDS0297	TAPPING SCREW,STEEL	5 AKEI
		SERVICE FIXTURES AND TOOLS	
	VFMS0003H6	VHS ALIGNMENT TAPE	
	VFKS0009	REEL TABLE HEIGHT FIXTURE	
	VFKS0010	POST ADJUSTMENT PLATE	
	VFKS0081	GREASE	
	VFK0329	POST ADJUSTMENT DRIVER	
	VFK1301	SILICON GREASE	
	VFK27	HEAD CLEANING STICK	
	VFK0330	H-POSITION ADJUSTMENT DRIVER	
	TSM10032-2	PERMALLOY MAGNETIC STRIP	
	VUZS0002	EXTENSION CABLE KIT	
	VUVS0001	MODE SELECT SW ASS'Y	
	VUVS0002	EXTENSION CABLE -1	
	VUVS0003	EXTENSION CABLE -2	
		(FOR Hi-Fi MODEL)	
	VUVS0004	EXTENSION CABLE -2	
		(FOR 4 HEAD MODEL)	
	VUVS0005	EXTENSION CABLE -2	
		(FOR 2 HEAD MODEL)	

ELECTRICAL REPLACEMENT PARTS LIST

(E1, E2, E4, E5, E6, E7, E9, E11, E12, E16, E17, E18)

Ref. No.	Part No.	Part Name	Remarks
		PRINTED CIRCUIT BOARD ASSEMBLY	
E1	VEPS3050E	MAIN C.B.A.	■ E.S.D. RTL AKEI
	(A)		
E1	VEPS3050D	MAIN C.B.A.	■ E.S.D. RTL AKEI
	(B,C)		
E2	VEPS4016A1	TV STEREO C.B.A.	▲ E.S.D. RTL AKEI
	(A)		
E2	VEPS4024B	HIFI AUDIO C.B.A.	E.S.D. RTL AKEI
	(B,C)		
E4	VEPS8026A1	OPERATION I C.B.A.	■ RTL AKEI
E5	VEPS8027A1	OPERATION II C.B.A.	■ RTL AKEI
E9	VEPS04128F1	AUDIO/VIDEO JACK C.B.A.	■ RTL AKEI
	(A)		
E9	VEPS04120G1	AUDIO/VIDEO JACK C.B.A.	■ RTL AKEI
	(B,C)		
E6	VEPS5012Z1	HEAD AMP C.B.A.	■ RTL AKEI
	(A)		
E6	VEPS5010Y	Hi-Fi AUDIO/VIDEO HEAD AMP	■ RTL AKEI
		C.B.A.	
	(B,C)		
E7	VEPS0A25A	JUNCTION C.B.A.	■ RTL
E11	VEPS4014F	STEREO AMP C.B.A.	■ RTL AKEI
	(A)		
E11	VEPS4014G	STEREO AMP C.B.A.	■ RTL AKEI
	(B,C)		
E12	LRP23009A	TV POWER C.B.A.	■ RTL AKEI
E16	LRM61005D	TV MAIN C.B.A.	■ RTL AKEI
	(A)		
E16	LRM61005C	TV MAIN C.B.A.	■ RTL AKEI
	(B,C)		
E18	LRP23011A	TV MAIN CHILD C.B.A.	▲ RTL AKEI
E17	LRP63002N	CRT C.B.A.	▲ RTL AKEI
		MAIN C.B.A.	■
		INTEGRATED CIRCUITS	
IC1001	0N3131-R.KT	IC, LINEAR ERROR V. DET	⚠
	OR 0N3131-S.KT	IC, LINEAR ERROR V. DET	⚠
IC3001	AN3476FBP	IC, LINEAR VIDEO/AUDIO PROCESS	
IC3201	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC3301	LC8643125F90	IC, 8BIT MICROCONTROLLER	E.S.D. AKEI
		OSD/CCV	
IC5301	AN5367FB	IC, LINEAR Y/C SIGNAL PROCESS	AKEI
IC6001	MN675058A4N	IC, 8BIT MICROCONTROLLER	E.S.D.
IC6002	CNA1801N	REEL SENSOR UNIT	
IC6003	CNA1801N	REEL SENSOR UNIT	
IC6004	24LC01B/PS1	IC, 1K EEPROM MEMORY	E.S.D. AKEI
		TRANSISTORS	
Q1001	2SC4533LP.KT		⚠
	OR 2SC5130LF608		⚠
	(A)		
	2SC4130LF608		⚠
	OR 2SC4559LP.KT		⚠
	(B,C)		
Q1002	2SD1458		
Q1003	2SD636(Q,R,S)		
Q1004	2SB641(Q,R,S)		
Q1005	2SB641(R,S)		
	(A)		
	2SB641(R)		
	(B,C)		
Q1051	2SC3852		
Q1052	2SC945A(TP)		AKEI
Q3001	2SB709(R,S)	CHIP	
Q3002	2SD601(R,S)	CHIP	
Q3310	2SD601(R,S)	CHIP	
Q3311	2SB709(R,S)	CHIP	
Q3314	IMX1	COMPLX CMP SI NPN CHIP	

Ref. No.	Part No.	Part Name	Remarks
Q3315	UN2112	CHIP	
Q4001	2SB709(R,S)	CHIP	
Q4002	2SD601A(R,S)	CHIP	
Q4003	2SD601A(R,S)	CHIP	
Q4004	UN2213	CHIP	
	(B,C)		
Q4005	UN1215		
Q4006	UN1115	CHIP	
Q4101	2SC945A(TP)		AKEI
Q4154	UN2212	CHIP	
	(A)		
Q5301	2SD601(R,S)	CHIP	
Q5302	2SD601(R,S)	CHIP	
Q5601	2SD601(R,S)	CHIP	
Q5901	2SD2259		
Q5951	2SB709(R,S)	CHIP	
Q5952	2SD601(R,S)	CHIP	
Q5953	2SB709(R,S)	CHIP	
Q6002	2SD601(R,S)	CHIP	
Q6003	2SB709(R,S)	CHIP	
Q6004	2SB709(R,S)	CHIP	
Q6005	2SD601(R,S)	CHIP	
Q6006	UN211L	CHIP	
Q6007	2SD601(R,S)	CHIP	
Q6008	VEKS5522	PHOTO SENSOR UNIT	
Q6009	VEKS5522	PHOTO SENSOR UNIT	
		DIODES	
D1001	S1WBA40		⚠
	OR S1WBA60		⚠
	OR S1WBA60B		⚠
D1002	ERA18-04		
D1003	ERA18-04		
D1005	ERA18-04		
D1006	RU2YXLFC1		
	(A)		
	RU3YXLFC1		
	(B,C)		
D1007	ERA18-04		
	(A)		
	EG01		
	(B,C)		
D1008	EK13		
	(A)		
	RK14		
	(B,C)		
D1011	MA4051NH	ZENER 5.1V	
D1012	MA858		
D1013	MA165		
D1015	RD18FB	ZENER 18V	⚠
D1016	MA165		
D1051	MA4100N	ZENER 10V	
D1052	MA165		
D1053	MA165		
D1054	HZ30-3TD	ZENER 30V	
D3301	MA372J-TX	CHIP	AKEI
D3302	MA165		
D4022	MA4056-M	ZENER 5.6V	
D5304	MA165		
D5501	MA4062-L	ZENER 6.2V	
D5502	MA165		
D5503	MA165		
D5504	MA165		
D5505	MA165		
D5601	MA165		
D5951	MA165		
D5952	MA4051-M	ZENER 5.1V	
D5953	MA165		
D5954	MA165		
D5955	MA165		
D6001	VEKS5521	SENSOR LED UNIT	
D6002	MA165		
D6201	MA165		
D6202	MA165		
D6203	MA165		
D6204	MA165		

Ref. No.	Part No.	Part Name	Remarks
		RESISTORS	
R1003	VRESE2TJ334	1/2W 330K	
R1004	ERG2SJ333H	METAL OXIDE 2W 33K	
R1005	ERG1SJ560P	METAL OXIDE 1W 56	
	(A)		
	ERG1SJ680P	METAL OXIDE 1W 68	
	(B,C)		
R1006	ERDS2TJ222	2.2K	
R1007	ERDS2TJ101	100	
R1008	ERDS2TJ392	3.9K	
R1010	ERD25FJ100P	10	⚠
	OR ERD25FPJ100P	10	⚠
	OR VRESF4FJ100P	10	⚠
R1011	ERD25FJ4R7P	4.7	⚠
	OR ERD25FPJ4R7P	4.7	⚠
	OR VRESF4FJ4R7P	4.7	⚠
R1014	ERDS2TJ221	220	
R1015	ERDS2TJ221	220	
R1016	ERDS2TJ562	5.6K	
R1017	ERDS2TJ103	10K	
R1018	ERDS2TJ183	18K	
R1019	ERDS2TJ392	3.9K	
R1020	ERDS2TJ682	6.8K	
R1022	ERDS2TJ221	220	
R1051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1052	ERDS2TJ153	15K	
R1053	ERDS2TJ153	15K	
R1057	ERDS2TJ182	1.8K	
R3001	ERDS2TJ221	220	
R3002	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3004	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(A)		
R3005	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(A)		
R3006	ERDS2TJ221	220	
R3009	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3010	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3011	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3013	ERDS2TJ221	220	
R3014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
	(A)		
R3015	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(A)		
R3016	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3017	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3024	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R3025	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3026	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3028	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3029	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R3032	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3033	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3034	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3035	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3036	ERJ6GEYG102V	MGF CHIP +-2% 1/10W 1K	
R3037	ERJ6GEYG102V	MGF CHIP +-2% 1/10W 1K	
R3038	ERDS2TJ222	2.2K	
R3039	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
	(A)		
R3040	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(A)		
R3042	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3043	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
	(A)		
R3044	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
	(A)		
R3045	ERDS2TJ182	1.8K	
	(A)		
R3046	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
	(A)		
R3077	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3081	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R3082	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3083	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3084	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3085	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R3091	ERDS2TJ102	1K	

Ref. No.	Part No.	Part Name	Remarks
R3092	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3301	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3302	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3303	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3304	ERDS2TJ222	2.2K	
R3305	ERDS2TJ222	2.2K	
R3306	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3308	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3309	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3310	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3312	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R3321	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3325	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3326	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3329	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3330	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3331	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3332	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
	(B,C)		
R3336	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3337	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
	(B,C)		
R3338	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
	(A)		
	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(B,C)		
R3339	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
	(B,C)		
R3341	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3345	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3346	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3347	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3353	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
	(B,C)		
R3354	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R3361	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3362	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3363	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3365	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3366	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3369	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3370	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3372	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3375	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3377	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3378	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3379	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3380	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3381	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3390	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERDS2TJ222	2.2K	
R4008	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4009	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4010	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
	(A)		
	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
	(B,C)		
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4013	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4018	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
	(A)		
R4021	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
	(A)		
R4024	ERDS2TJ272	2.7K	
R4025	ERDS2TJ272	2.7K	
R4031	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4032	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4033	ERJ6GEYJ821V	MGF CHIP 1/10W 820	

Ref. No.	Part No.	Part Name	Remarks
R4034	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(B,C)		
R4036	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
	(B,C)		
R4037	ERDS2TJ223	22K	
	(B,C)		
R4101	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R4102	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4171	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(A)		
	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(B,C)		
R5301	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5302	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5303	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5304	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R5305	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R5306	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5307	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R5308	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R5309	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R5311	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5312	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5313	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5314	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5315	ERDS2TJ101	100	
R5316	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5317	ERDS2TJ101	100	
R5318	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5401	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5402	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R5403	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5405	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5406	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5501	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R5502	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R5503	ERDS2TJ471	470	
R5504	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5505	ERJ6ENF3241V	MGF CHIP +-1% 1/10W 3.24K	⚠ AKEI
R5508	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5510	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5511	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5512	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R5513	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5601	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R5604	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R5610	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5611	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5612	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5613	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5901	ERQ12AJ270P	FUSE 1/2W 27	⚠ AKEI
R5902	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5932	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5933	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5934	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5951	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R5952	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5953	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5954	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5955	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R5956	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5957	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6001	ERDS2TJ561	560	
R6002	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6003	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6005	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6006	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R6007	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6008	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6009	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6010	ERDS2TJ560	56	
R6011	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6012	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6013	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6014	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6015	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6016	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

Ref. No.	Part No.	Part Name	Remarks
R6018	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6020	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6021	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(B,C)		
R6022	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6023	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6024	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6026	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6027	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6028	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6029	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6032	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6033	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6035	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6036	ERDS2TJ221	220	
	(B,C)		
R6037	ERDS2TJ102	1K	
R6038	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6041	ERDS2TJ223	22K	
R6042	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6043	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6044	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6045	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
	(B,C)		
R6046	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6047	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6048	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6049	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6050	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6051	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6052	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6053	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(B,C)		
R6055	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6056	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6057	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6061	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6066	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(A)		
R6067	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(B,C)		
R6068	ERDS2TJ103	10K	
R6069	ERDS2TJ103	10K	
R6070	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6075	ERDS2TJ224	220K	
	(B,C)		
R6076	ERDS2TJ153	15K	
	(B,C)		
R6077	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(B,C)		
R6078	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6079	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6082	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6083	ERDS2TJ681	680	
R6085	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6086	ERDS2TJ332	3.3K	
R6087	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6091	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6094	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6095	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6096	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6097	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6098	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6099	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6100	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6112	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6113	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6115	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(B,C)		
R6116	ERDS2TJ561	560	
R6118	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6119	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(B,C)		
R6120	ERDS2TJ221	220	
R6121	ERDS2TJ221	220	

Ref. No.	Part No.	Part Name	Remarks
R6201	EVNCYAA03B15	VARIABLE 100K	
	(A)		
	EVMF6SA00B15	VARIABLE 100K	
	(B,C)		
R6202	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6203	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6204	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6205	ERJ6GEYJ243V	MGF CHIP 1/10W 24K	
R6206	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6207	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6208	ERJ6GEYJ823V	MGF CHIP 1/10W 82K	
R6209	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
	(A)		
	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
	(B,C)		
R6210	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
	(B,C)		
R6211	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6212	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6213	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6214	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R6215	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
R6216	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6217	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R6218	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
	(A)		
	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
	(B,C)		
R6219	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6220	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6221	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6222	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
R6223	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6224	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6229	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R6230	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
		CAPACITORS	
C1001	ECKDRS103ZV	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEKD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEMD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEVD103PZ	CERAMIC +80%-20% 125V 0.01	⚠ AKEI
	OR VCKSGKD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSGMD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTKG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTMG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUKD103MY	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSUMD103MY	CERAMIC +-20% 125V 0.01	⚠
C1002	ECKDRS332MED	CERAMIC +-20% 125V 3300P	⚠
	OR ECKMRS332MEY	CERAMIC +-20% 125V 3300P	⚠ AKEI
	OR VCKSEKD332MY	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSEVD332MY	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTKG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTMG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUKD332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUMD332MX	CERAMIC +-20% 125V 3300P	⚠
C1003	VCKSFKK102MX	CERAMIC +-20% 125V 1000P	⚠
	OR VCKSFMK102MX	CERAMIC +-20% 125V 1000P	⚠ AKEI
	OR VCKSFVK102MX	CERAMIC +-20% 125V 1000P	⚠ AKEI
C1004	ECEA2DU820YE	ELECTROLYTIC 200V 82	⚠
	(A)		
	ECEA2DU121YE	ELECTROLYTIC 200V 120	⚠
	(B,C)		
C1005	ECEA2DG4R7	ELECTROLYTIC 200V 4.7	
C1006	ECKW2H221KB5	CERAMIC 500V 220P	
C1007	VCYSBRC104MX	CERAMIC +-20% 16V 0.1	
C1009	ECQB1H103JF	POLYESTER +-5% 50V 0.01	
C1010	ECQB1H103JF	POLYESTER +-5% 50V 0.01	
C1011	ECEA1HU4R7	ELECTROLYTIC 50V 4.7	
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1013	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1014	ECEA1HGE470	ELECTROLYTIC 50V 47	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1017	ECEA1PEE331	ELECTROLYTIC 18V 330	
	(A)		
	ECA0JFE102XB	ELECTROLYTIC 6.3V 1000	
	(B,C)		

Ref. No.	Part No.	Part Name	Remarks
C1018	ECQB1H104P9	POLYESTER +100%-0% 50V 0.1	
C1021	ECEA1HKG010	ELECTROLYTIC 50V 1	
C1025	ECKDRS221MB	CERAMIC +-20% 125V 220P ⚠	
	OR ECKMRS221MBY	CERAMIC +-20% 125V 220P ⚠	AKEI
	OR VCKSEJD221KW	CERAMIC 125V 220P ⚠	AKEI
	OR VCKSELD221KW	CERAMIC 125V 220P ⚠	AKEI
	OR VCKSHJD221MW	CERAMIC +-20% 125V 220P ⚠	
	OR VCKSHLD221MW	CERAMIC +-20% 125V 220P ⚠	
	OR VCKSTJG221KW	CERAMIC 250V 220P ⚠	AKEI
	OR VCKSTLG221KW	CERAMIC 250V 220P ⚠	AKEI
	OR VCKSUJD221KW	CERAMIC 125V 220P ⚠	AKEI
	OR VCKSULD221KW	CERAMIC 125V 220P ⚠	AKEI
C1027	ECKDRS103ZV	CERAMIC +80%-20% 125V 0.01 ⚠	
	OR VCKSEKD103PZ	CERAMIC +80%-20% 125V 0.01 ⚠	
	OR VCKSEMD103PZ	CERAMIC +80%-20% 125V 0.01 ⚠	
	OR VCKSGKD103QZ	CERAMIC +80%-20% 125V 0.01 ⚠	
	OR VCKSGMD103QZ	CERAMIC +80%-20% 125V 0.01 ⚠	
	OR VCKSTKG103ZY	CERAMIC +80%-20% 125V 0.01 ⚠	
	OR VCKSTMG103ZY	CERAMIC +80%-20% 125V 0.01 ⚠	
	OR VCKSUKD103MY	CERAMIC +-20% 125V 0.01 ⚠	
	OR VCKSUMD103MY	CERAMIC +-20% 125V 0.01 ⚠	
	(B,C)		
C1028	ECKDRS221MB	CERAMIC +-20% 125V 220P ⚠	
	OR ECKMRS221MBY	CERAMIC +-20% 125V 220P ⚠	AKEI
	OR VCKSEJD221KW	CERAMIC 125V 220P ⚠	AKEI
	OR VCKSELD221KW	CERAMIC 125V 220P ⚠	AKEI
	OR VCKSHJD221MW	CERAMIC +-20% 125V 220P ⚠	
	OR VCKSHLD221MW	CERAMIC +-20% 125V 220P ⚠	
	OR VCKSTJG221KW	CERAMIC 250V 220P ⚠	AKEI
	OR VCKSTLG221KW	CERAMIC 250V 220P ⚠	AKEI
	OR VCKSUJD221KW	CERAMIC 125V 220P ⚠	AKEI
	OR VCKSULD221KW	CERAMIC 125V 220P ⚠	AKEI
C1030	VCYSBRE183KX	CERAMIC 25V 0.018	
C1051	ECEA1HUR47	ELECTROLYTIC 50V 0.47	
C1052	ECEA1CU100	ELECTROLYTIC 16V 10	
C3001	ECUV1H103KBN	C CHIP 50V 0.01	
C3006	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3008	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3009	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3011	ECUV1H470JCN	C CHIP +-5% 50V 47P	
C3013	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3015	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3016	ECEA1CKS100	ELECTROLYTIC 16V 10	
C3018	VCESAI1A100I	ELECTROLYTIC 6.3V 10	AKEI
C3019	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3020	ECEA1CKA220	ELECTROLYTIC 16V 22	
C3021	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3022	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3023	ECUV1H680JCN	C CHIP +-5% 50V 68P	
C3024	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3025	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3026	ECUV1H822KBN	C CHIP 50V 8200P	
C3027	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3030	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3031	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3032	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3034	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3035	ECUV1H180JCN	C CHIP +-5% 50V 18P	
	(A)		
	ECUV1H390JCN	C CHIP +-5% 50V 39P	
	(B,C)		
C3036	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3038	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3041	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3043	ECUV1H392KBN	C CHIP 50V 3900P	
C3044	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3045	ECEA1HKS3R3	ELECTROLYTIC 50V 3.3	
C3046	ECEA1HKS2R2	ELECTROLYTIC 50V 2.2	
C3047	VCESAJ1A100I	ELECTROLYTIC 10V 10	AKEI
C3048	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3050	ECEA0JKS220	ELECTROLYTIC 6.3V 22	
C3053	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3054	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
	(B,C)		
C3055	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3056	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3057	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3058	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	

Ref. No.	Part No.	Part Name	Remarks
C3060	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3082	ECUV1H272KBN	C CHIP 50V 2700P	
C3083	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3091	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3092	VCYSARC103NY	CERAMIC +-30% 16V 0.01	
C3093	VCYSARC103NY	CERAMIC +-30% 16V 0.01	
C3231	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3232	ECUV1H102KBN	C CHIP 50V 1000P	
C3234	VCESAI1A100I	ELECTROLYTIC 6.3V 10	AKEI
C3235	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3236	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3237	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3301	ECUV1H330JCN	C CHIP +-5% 50V 33P	
C3302	ECUV1H330JCN	C CHIP +-5% 50V 33P	
C3303	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3304	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3305	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3306	ECUV1H270JCN	C CHIP +-5% 50V 27P	
C3307	ECUV1H080CCN	C CHIP +-0.25P 50V 8P	
C3308	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3309	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3310	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3311	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3312	ECUV1H102KBN	C CHIP 50V 1000P	
C3313	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3314	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3315	ECUV1H101JCN	C CHIP +-5% 50V 100P	
	(B,C)		
C3316	ECUV1H101JCN	C CHIP +-5% 50V 100P	
	(B,C)		
C3317	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C3321	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(B,C)		
C3322	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(B,C)		
C3326	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3363	ECUV1H220JCN	C CHIP +-5% 50V 22P	
C4001	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4002	ECEA1HKS010	ELECTROLYTIC 50V 1	
C4003	ECUV1H272KBN	C CHIP 50V 2700P	
C4004	ECUV1H103KBN	C CHIP 50V 0.01	
C4005	ECEA0JKS220	ELECTROLYTIC 6.3V 22	
C4006	ECUV1H102KBN	C CHIP 50V 1000P	
C4007	ECEA0JKS220	ELECTROLYTIC 6.3V 22	
C4008	ECEA0JKS470	ELECTROLYTIC 6.3V 47	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4010	ECUV1E333KBN	C CHIP 25V 0.033	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4013	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4014	ECEA1HKS010	ELECTROLYTIC 50V 1	
C4022	ECEA1CKA101	ELECTROLYTIC 16V 100	
C4030	ECUV1E333KBN	C CHIP 25V 0.033	
C4032	ECUV1H103KBN	C CHIP 50V 0.01	
C4033	ECEA1HKS010	ELECTROLYTIC 50V 1	
	(A)		
C4099	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C4102	ECQB1562JF	POLYESTER +-5% 100V 5600P	
C4103	ECUV1H103KBN	C CHIP 50V 0.01	
C4104	ECUV1H103KBN	C CHIP 50V 0.01	
C4105	ECEA1CKA220	ELECTROLYTIC 16V 22	
C4171	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5301	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5302	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C5303	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C5305	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C5306	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5307	ECEA1CKN100	ELECTROLYTIC 16V 10	
C5308	ECEA1CKN100	ELECTROLYTIC 16V 10	
C5401	ECEA1HKNR22	ELECTROLYTIC 50V 0.22	
C5402	ECUV1H222KBN	C CHIP 50V 2200P	
C5403	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C5501	ECUV1E183KBN	C CHIP 25V 0.018	
C5502	ECUV1H471KBN	C CHIP 50V 470P	
C5505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C5506	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5507	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5508	ECUV1H221JSN	C CHIP +-5% 50V 220P	AKEI
C5510	ECEA1HKA010	ELECTROLYTIC 50V 1	

(E2)

Ref. No.	Part No.	Part Name	Remarks
C5511	ECUV1E333KBN	C CHIP 25V 0.033	
C5516	ECUV1E333KBN	C CHIP 25V 0.033	
C5601	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5602	ECUV1E104KBN	C CHIP 25V 0.1	
C5603	ECUV1H150JCN	C CHIP +-5% 50V 15P	
C5604	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5605	ECUV1H153KBN	C CHIP 50V 0.015	
C5606	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
C5607	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5902	ECEA1CKA470	ELECTROLYTIC 16V 47	
C5903	ECEA1CKA470	ELECTROLYTIC 16V 47	
C5904	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5905	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C5906	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5931	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5932	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5951	ECA1CM221	ELECTROLYTIC 16V 220	
C6001	ECEA0JU471	ELECTROLYTIC 6.3V 470	
C6005	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6006	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6007	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6008	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6009	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6011	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6012	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6013	ECUV1E104KBN	C CHIP 25V 0.1	
C6014	ECUV1H150GCN	C CHIP +-2% 50V 15P	
C6015	ECUV1H120JCN	C CHIP +-5% 50V 12P	
C6017	ECEA0JKS470	ELECTROLYTIC 6.3V 47	
C6018	ECUV1H102KBN	C CHIP 50V 1000P	
C6020	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6021	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6023	ECUV1H102KBN	C CHIP 50V 1000P	
C6024	ECUV1H102KBN	C CHIP 50V 1000P	
C6036	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6201	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6202	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C6203	ECUV1H103KBN	C CHIP 50V 0.01	
C6204	ECUV1H103KBN	C CHIP 50V 0.01	
C6205	ECUV1H102KBN	C CHIP 50V 1000P	
C6206	ECUV1H103KBN	C CHIP 50V 0.01	
C6207	ECQB1H393KF	POLYESTER 50V 0.039	
C6208	ECEA1HKA010	ELECTROLYTIC 50V 1	
C6209	ECEA1CKS100	ELECTROLYTIC 16V 10	
C6211	ECUV1H272KBN	C CHIP 50V 2700P	
C6212	ECUV1E104KBN	C CHIP 25V 0.1	
C6213	ECUV1H151KN	C CHIP 50V 150P	
C6214	ECUV1H102KBN	C CHIP 50V 1000P	
C6217	ECUV1E104KBN	C CHIP 25V 0.1	
C6218	ECEA1CKA100	ELECTROLYTIC 16V 10	
C6221	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C6222	ECUV1H272KBN	C CHIP 50V 2700P	
C6223	ECUV1H103KBN	C CHIP 50V 0.01	
C6224	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6225	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
C6228	VCYSBRC104MX	CERAMIC +-20% 16V 0.1	
C6231	ECEA1CKA100	ELECTROLYTIC 16V 10	
		FILTERS	
FL4001	VLFS0014		
		COILS	
L1001	ELF15N005A	LINE FILTER 0.5A 18M	⚠
	OR ELF18D290A	LINE FILTER 0.5A 18M	⚠
	OR LLN23012A	LINE FILTER 0.5A 18M	⚠
	OR VLQS0157	LINE FILTER 0.5A 18M	⚠
	OR VLQS0166	LINE FILTER 0.5A 18M	⚠
	OR VLQS0167	LINE FILTER 0.5A 18M	⚠
	OR VLQS0168	LINE FILTER 0.5A 18M	⚠ AKEI
L1002	VLQSW07D220M	+-20% 22	
L1003	VLQSW07D9R0M	+-20% 9	
L1006	VLPS0005A	BEAD INDUCTOR	
L3001	VLQSH02R101K	100	
L3002	ELESN101KA	100	
L3004	ELESN101KA	100	
L3005	VLQSH02R330K	33	

Ref. No.	Part No.	Part Name	Remarks
L3010	ELESN101KA	100	
L3231	ELESN221KA	220	
L3301	VLQSH02R5R6J	+-5% 5.6	AKEI
L3302	ELESN101KA	100	
L4002	VLQSH02R101K	100	
L4003	VLQSH02R100K	10	
L4005	VLQSU06R153K	15M	
L4101	ELESN471KA	470	
L5901	ELESN101KA	100	
		CRYSTAL OSCILLATOR	
X3301	VSXS0207		AKEI
X5501	CSB503F38		
X5601	VSXS0208-B		
X6001	VSXS0784		AKEI
		PIN HEADERS	
P1002	VJPS0303	CONNECTOR 2P	
P1201	VJPS0765	CONNECTOR PLUG 7P	AKEI
P1202	VJPS0768	CONNECTOR PLUG 19P	AKEI
P1203	VJPS0767	CONNECTOR PLUG 13P	AKEI
P3002	VJPS0275	CONNECTOR 5P	
	(A)		
	VJPS0268	CONNECTOR 2P	
	(B,C)		
P3003	VJPS0882	CONNECTOR 12P	
	(A)		
	VJPS0885	CONNECTOR 20P	
	(B,C)		
P4001	VJSS0888	FE CONNECTOR 2P	
P6002	VJPS0881	CONNECTOR 8P	
P6011	VJPS0277	CONNECTOR 7P	
P6012	VJPS0277	CONNECTOR 7P	
P6201	VJPS0883	CONNECTOR 14P	
P6301	VJSS0234	CONNECTOR 12P	
		SWITCHES	
SW6001	VSHS0058	LEAF SWITCH-SAFETY TAB	
SW6002	VSSS0159	MODE SELECT SWITCH	
		FUSE & PROTECTOR	
F1001	VSFS0003A16	FUSE 125V 1.6A	⚠
	OR VSFS0012A16	FUSE 125V 1.6A	⚠
	OR VSFS0028A16	FUSE 125V 1.6A	⚠
	OR XBA1C16NU100	FUSE 125V 1.6A	⚠
PR1001	ICP-F38-1	IC PROTECTOR 1.5A	⚠
	OR UN10015	IC PROTECTOR 1.5A	⚠
	OR VSFS0029D25	IC PROTECTOR 1.5A	⚠
PR1050	ICP-F38-1	IC PROTECTOR 1.5A	⚠
	OR UN10015	IC PROTECTOR 1.5A	⚠
	OR VSFS0029D25	IC PROTECTOR 1.5A	⚠
PR1054	ICP-F25-1	IC PROTECTOR 1.0A	⚠ AKEI
	OR UN11010	IC PROTECTOR 1.0A	⚠ AKEI
		TRANSFORMER	
T1001	ETS28AD1F5AC		⚠
	OR VTPS0034		⚠
	OR VTPS0038		⚠ AKEI
	OR VTPS0040		⚠
T4101	VLTS0304		
		PRINTED CIRCUIT BOARD ASSEMBLY	
E2	VEPS4016A1	TV STEREO C.B.A.	▲ E.S.D. RTL AKEI
	(A)		
E2	VEPS4024B	Hi-Fi AUDIO C.B.A.	▲ E.S.D. RTL AKEI
	(B,C)		

(E23, E29, E30, E48, E54, E55)

Ref. No.	Part No.	Part Name	Remarks
		MISCELLANEOUS	
E23	VJSS3325	FUSE HOLDER	AKEI
E29	VMTS0059	CUSHION,RUBBER	
E30	VMTS0035	CUSHION,RUBBER	
E48	XYN3+F10S	SCREW W/WASHER,STEEL	
	(B,C)		
E54	VSCS1072	HEAT SINK PLATE,STEEL	
	(B,C)		
E55	XNG3	NUT,STEEL	
	(B,C)		
		TV STEREO C.B.A.	▲
		(A)	
		INTEGRATED CIRCUITS	
IC4901	VCRS0214	IC, HYBRID MTS/SAP PROCESS	E.S.D. AKEI
IC9201	AN7420	IC, LINEAR FM SIGNAL PROCESS	AKEI
IC9202	UPC4570C	IC, LINEAR OP AMP	
IC9301	TC4053BP	IC, LOGIC SWITCHING	E.S.D. AKEI
IC9302	TC4053BP	IC, LOGIC SWITCHING	E.S.D. AKEI
		TRANSISTORS	
Q4306	2SA733(TP)		AKEI
Q9201	DTA144ES		
Q9301	2SC945A(TP)		
Q9302	2SC945A(TP)		
		DIODES	
D4302	MA165		
D4304	MA165		
D4305	MA165		
D4306	MA165		
		RESISTORS	
R4301	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4302	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4324	ERJ6GEYJ124V	MGF CHIP 1/10W 120K	
R4325	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4326	ERJ6GEYJ124V	MGF CHIP 1/10W 120K	
R4327	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R4901	EVNDCAA03B14	VARIABLE 10K	
R4904	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R9201	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9202	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9203	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9204	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R9205	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R9206	EVMF6SA00B53	VARIABLE 100K	AKEI
R9207	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R9211	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R9216	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R9217	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R9218	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9219	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9220	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9221	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9301	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R9302	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R9303	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R9304	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R9305	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9306	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9307	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R9308	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R9309	ERDS2TJ221	220	
R9310	ERDS2TJ221	220	
R9311	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9312	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9313	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9314	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9316	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	

(E39)

Ref. No.	Part No.	Part Name	Remarks
R9317	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9318	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R9319	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9320	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9324	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R9326	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R9327	ERDS2TJ221	220	
		CAPACITORS	
C4316	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4318	ECEA1CKA101	ELECTROLYTIC 16V 100	
C4901	ECEA1CKA470	ELECTROLYTIC 16V 47	
C9201	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9202	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C9203	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9204	ECQP1H102J	POLYESTER +-5% 50V 1000P	
C9205	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9206	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C9207	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9208	ECUV1H223KBN	C CHIP 50V 0.022	
C9209	ECUV1H223KBN	C CHIP 50V 0.022	
C9218	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9219	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C9220	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9221	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C9301	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9302	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9303	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9305	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9307	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9308	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9310	ECEA1CKA470	ELECTROLYTIC 16V 47	
C9312	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9313	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9314	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9315	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C9316	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9319	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9320	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
		COILS	
L9201	ELESN101KA	100	
L9204	ELESN101KA	100	
		PIN HEADERS	
P4201	VJHS0298	PACK PIN 8P	
P4202	VJHS0295	PACK PIN 5P	
P4203	VJHS0298	PACK PIN 8P	
P4204	VJHS0298	PACK PIN 8P	
P4301	VJPS0286	CONNECTOR 7P	
		MISCELLANEOUS	
E39	VMAS1912	P.C.B. SUPPORT ANGLE	
		Hi-Fi AUDIO C.B.A.	▲
		(B,C)	
		INTEGRATED CIRCUITS	
IC4201	AN3962FB-V	IC, LINEAR Hi-Fi AUDIO PROCESS	
IC4301	CXA1279AS	IC, LINEAR TONE CONTROL	
IC4501	AN7395S	IC, LINEAR SPATIALIZER	
IC4951	VCRS0216	IC, HYBRID MTS/SAP AUDIO PROCESS	E.S.D. AKEI
IC9201	AN7420	IC, LINEAR FM SIGNAL PROCESS	AKEI
		TRANSISTORS	
Q4306	2SB709(R,S)	CHIP	
Q9201	DTA144EK	CHIP	

Ref. No.	Part No.	Part Name	Remarks
		DIODES	
D4201	MA165		
D4302	MA165		
D4304	MA165		
D4305	MA165		
D4306	MA165		
D4501	MA4091-M	ZENER 9.1V	
		RESISTORS	
R4201	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4202	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4203	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
R4204	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
R4205	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4206	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4207	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4208	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4209	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4210	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4211	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R4213	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4214	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4215	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4216	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4217	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4218	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4219	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R4221	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4222	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4223	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R4224	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R4225	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4241	ERA6YEB153V	MGF CHIP +-0.1% 1/10W 15K	
R4243	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4244	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4245	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4246	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4247	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4248	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4249	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4250	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4301	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4302	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4303	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4304	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4308	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4310	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R4312	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R4319	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4320	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4321	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4323	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R4324	ERJ6GEYJ124V	MGF CHIP 1/10W 120K	
R4325	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4326	ERJ6GEYJ124V	MGF CHIP 1/10W 120K	
R4327	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R4328	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4501	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4502	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4503	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4504	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4505	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
R4509	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4510	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4515	ERDS2TJ181	180	
R4519	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4520	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R4951	EVNDCAA03B14	VARIABLE 10K	
R4954	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R9201	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9202	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9203	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9204	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R9205	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R9206	EVMF6SA00B53	VARIABLE 100K	AKEI
R9207	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	

Ref. No.	Part No.	Part Name	Remarks
R9211	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
		CAPACITORS	
C4201	ECQB1H473KF	POLYESTER 50V 0.047	
C4202	ECQB1H473KF	POLYESTER 50V 0.047	
C4203	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4204	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4205	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4206	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4207	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4208	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4209	ECQB1H153KF	POLYESTER 50V 0.015	
C4210	ECQB1H153KF	POLYESTER 50V 0.015	
C4211	ECQB1H103KF	POLYESTER 50V 0.01	
C4212	ECQB1H103KF	POLYESTER 50V 0.01	
C4213	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4214	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4217	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4218	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4219	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4220	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4221	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4222	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4223	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4224	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4235	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4236	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4237	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4239	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4240	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4242	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4243	ECUV1H472KBN	C CHIP 50V 4700P	
C4244	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
C4245	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4247	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4248	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4301	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4302	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4304	ECEA1CKA101	ELECTROLYTIC 16V 100	
C4305	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4306	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4308	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C4309	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4310	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4311	ECEA1CKA470	ELECTROLYTIC 16V 47	
C4312	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C4313	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4314	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4315	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4316	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4317	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4318	ECEA1CKA101	ELECTROLYTIC 16V 100	
C4501	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4502	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4503	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4504	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4505	ECUV1E393KBN	C CHIP 25V 0.039	
C4506	ECUV1E563KBN	C CHIP 25V 0.056	
C4507	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4508	ECUV1H103KBN	C CHIP 50V 0.01	
C4509	ECUV1H273KBN	C CHIP 50V 0.027	
C4510	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4511	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4512	ECEA1AKA220	ELECTROLYTIC 10V 22	
C4513	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4517	ECEA1CKA101	ELECTROLYTIC 16V 100	
C4518	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4519	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4520	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4951	ECEA1CKA470	ELECTROLYTIC 16V 47	
C9201	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9202	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C9203	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9204	ECQP1H102J	POLYESTER +-5% 50V 1000P	
C9205	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9206	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C9207	ECEA1HKA010	ELECTROLYTIC 50V 1	

(E27, E39)

Ref. No.	Part No.	Part Name	Remarks
C9208	ECUV1H223KBN	C CHIP 50V 0.022	
C9209	ECUV1H223KBN	C CHIP 50V 0.022	
C9210	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9211	ECEA1HKA010	ELECTROLYTIC 50V 1	
		COILS	
L9201	ELESN101KA	100	
		PIN HEADERS	
P4201	VJHS0298	PACK PIN 8P	
P4202	VJHS0295	PACK PIN 5P	
P4203	VJHS0298	PACK PIN 8P	
P4204	VJHS0298	PACK PIN 8P	
P4205	VJHS0290	PACK PIN 10P	
P4206	VJHS0293	PACK PIN 3P	
P4207	VJPS0255	CONNECTOR 5P	
P4301	VJPS0286	CONNECTOR 7P	
		MISCELLANEOUS	
E39	VMAS1912	P.C.B. SUPPORT ANGLE	
		OPERATION I C.B.A.	■
		RESISTORS	
R6301	ERDS2TJ472	4.7K	
R6302	ERDS2TJ153	15K	
R6303	ERDS2TJ472	4.7K	
		PIN HEADERS	
P6302	VJWSCBN200BD	COMMU CABLE W/OUT PLUG	AKEI
		SWITCHES	
SW6301	EVQPAD05R	PUSH SWITCH	
SW6302	EVQPAD05R	PUSH SWITCH	
SW6303	EVQPAD05R	PUSH SWITCH	
SW6304	EVQPAD05R	PUSH SWITCH	
SW6305	EVQPAD05R	PUSH SWITCH	
		MISCELLANEOUS	
E27	PNA4617M00HD	INFRARED RECEIVER UNIT	
		OPERATION II C.B.A.	■
		DIODES	
D6302	LN31GCPHLMU	LED GREEN	
D6303	LN21RCPHLMV	LED RED	
D6304	LN31GCPHLMU	LED GREEN	
D6305	LN41YCPHLM	LED YELLOW	
		RESISTORS	
R6307	ERDS2TJ472	4.7K	
R6308	ERDS2TJ153	15K	
R6310	ERDS2TJ471	470	
R6311	ERDS2TJ471	470	
R6312	ERDS2TJ471	470	
R6313	ERDS2TJ471	470	
R7505	ERDS2TJ472	4.7K	
		SWITCHES	
SW6307	EVQPAD05R	PUSH SWITCH	
SW6308	EVQPAD05R	PUSH SWITCH	
SW6310	EVQPAD05R	PUSH SWITCH	
SW6311	EVQPAD05R	PUSH SWITCH	
SW6312	EVQPAD05R	PUSH SWITCH	

(E36)

Ref. No.	Part No.	Part Name	Remarks
		MISCELLANEOUS	
E36	VMXS0575	LED SPACER	
		AUDIO/VIDEO JACK C.B.A. ■	
		(A)	
		INTEGRATED CIRCUITS	
IC4501	UPC4570C	IC, LINEAR OP AMP	
		DIODES	
D4501	HZS5C1TD	ZENER 5.1V	AKEI
D4502	HZS5C1TD	ZENER 5.1V	AKEI
D4552	HZS9B3TD	ZENER 9.1V	AKEI
D4553	HZS9B3TD	ZENER 9.1V	AKEI
		RESISTORS	
R4501	ERDS2TJ562	5.6K	
R4502	ERDS2TJ104	100K	
R4503	ERDS2TJ104	100K	
R4504	ERDS2TJ750	75	
R4505	ERDS2TJ151	150	
R4551	ERDS2TJ821	820	
R4552	ERDS2TJ681	680	
R4553	ERDS2TJ821	820	
R4554	ERDS2TJ681	680	
		CAPACITORS	
C4501	ECEA1HKN010	ELECTROLYTIC 50V 1	
C4502	ECEA1CKA100	ELECTROLYTIC 16V 10	
		PIN HEADERS	
P4501	VEKS5572	CONNECTOR CORD W/PLUG	
P4551	VEKS5573	CONNECTOR CORD W/PLUG	
		JACKS	
JK4501	VJHS0713	FRONT A/V JACK SOCKET	AKEI
JK4551	VJJS0361	EARPHONE JACK SOCKET	
		AUDIO/VIDEO JACK C.B.A. ■	
		(B,C)	
		INTEGRATED CIRCUITS	
IC4901	LM833M	IC, LINEAR OP AMP	
		DIODES	
D4552	HZS9C1TD	ZENER 9.1V	
D4553	HZS9C1TD	ZENER 9.1V	
D4901	HZS5C1TD	ZENER 5.1V	AKEI
D4902	HZS5C1TD	ZENER 5.1V	AKEI
		RESISTORS	
R4551	ERDS2TJ821	820	
R4552	ERDS2TJ681	680	
R4553	ERDS2TJ821	820	
R4554	ERDS2TJ681	680	
R4901	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R4902	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4903	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4906	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4907	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
		CAPACITORS	
C4901	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4902	ECEA1CKA100	ELECTROLYTIC 16V 10	

Ref. No.	Part No.	Part Name	Remarks
		PIN HEADERS	
P4551	VEKS5573	P4551 CONNECTOR CORD W/PLUG	
P4901	VEKS5571	P4901 CONNECTOR CORD W/PLUG	
		MISCELLANEOUS	
JK4551	VJJS0361	EARPHONE JACK SOCKET	
JK4901	VJHS0714	FRONT A/V JACK SOCKET	AKEI
		HEAD AMP C.B.A.	■
		(A)	
		INTEGRATED CIRCUITS	
IC2601	AN3809K	IC, LINEAR CYL. DRIVE	
IC3501	AN3371SB	IC, LINEAR HEAD AMP	
		RESISTORS	
R2601	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2602	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2603	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2604	ERDS2TJ1R0	1	
R2605	ERDS2TJ1R2	1.2	
R2606	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3507	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
		CAPACITORS	
C2604	ECUV1E104KBN	C CHIP 25V 0.1	
C2605	ECUV1E104KBN	C CHIP 25V 0.1	
C2606	ECUV1E104KBN	C CHIP 25V 0.1	
C2607	ECUV1E104KBN	C CHIP 25V 0.1	
C2608	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2609	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2610	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C2611	ECUV1E333KBN	C CHIP 25V 0.033	
C2612	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2613	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2614	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2615	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3504	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3506	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3508	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3511	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3512	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3513	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3528	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3529	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
		COILS	
L3501	ELESN101KA	100	
		PIN HEADERS	
P3501	VJSS0883	CONNECTOR 12P	
		Hi-Fi AUDIO/VIDEO HEAD	■
		AMP C.B.A.	
		(B,C)	
		INTEGRATED CIRCUITS	
IC2601	AN3809K	IC, LINEAR CYL. DRIVE	
IC3501	AN3361SB	IC, LINEAR HEAD AMP	
IC4401	AN3328S	IC, LINEAR Hi-Fi AUDIO HEAD	
		AMP	
		RESISTORS	
R2601	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2602	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2603	ERJ6GEYJ330V	MGF CHIP 1/10W 33	

Ref. No.	Part No.	Part Name	Remarks
R2604	ERDS2TJ1R0	1	
R2605	ERDS2TJ1R2	1.2	
R2606	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3501	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3502	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3503	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3504	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3505	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3506	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3507	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4405	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4406	ERJ6GEYJ180V	MGF CHIP 1/10W 18	
R4407	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
		CAPACITORS	
C2604	ECUV1E104KBN	C CHIP 25V 0.1	
C2605	ECUV1E104KBN	C CHIP 25V 0.1	
C2606	ECUV1E104KBN	C CHIP 25V 0.1	
C2607	ECUV1E104KBN	C CHIP 25V 0.1	
C2608	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2609	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2610	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C2611	ECUV1E333KBN	C CHIP 25V 0.033	
C2612	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2613	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2614	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2615	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3504	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3506	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3507	ECUV1H103KBN	C CHIP 50V 0.01	
C3508	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3511	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3512	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3513	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3519	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3520	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3523	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3524	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3528	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3529	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3532	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3533	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4401	ECUV1H102KBN	C CHIP 50V 1000P	
C4402	ECUV1H102KBN	C CHIP 50V 1000P	
C4405	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4406	ECUV1H472KBN	C CHIP 50V 4700P	
C4408	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4409	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4411	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
C4412	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4413	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4414	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
		COILS	
L3501	ELESN101KA	100	
L4401	VLQSH02R101K	100	
		PIN HEADERS	
P3501	VJSS0886	CONNECTOR 20P	
		JUNCTION C.B.A.	■
		RESISTORS	
R2531	ERDS2TJ270	27	
		CAPACITORS	
C2531	ECEA1CKA220	ELECTROLYTIC 16V 22	
C2532	ECEA1CKA220	ELECTROLYTIC 16V 22	
C2533	ECEA1CKA220	ELECTROLYTIC 16V 22	

Ref. No.	Part No.	Part Name	Remarks
		PIN HEADERS	
P2531	VJSS0884	CONNECTOR 14P	
		STEREO AMP C.B.A.	■
		INTEGRATED CIRCUITS	
IC4601	AN5265	IC, LINEAR AUDIO AMP	
IC4602	AN5265	IC, LINEAR AUDIO AMP	
		TRANSISTORS	
Q4601	2SC945A(TP)		AKEI
Q4602	2SC945A(TP)		AKEI
		DIODES	
D4602	MA4120-M	ZENER 12V	
D4603	MA4056-M	ZENER 5.6V	
	(A)		
D4604	MA165		
D4605	MA165		
		RESISTORS	
R4601	ERDS2TJ103	10K	
	(B,C)		
R4602	ERDS2TJ102	1K	
R4603	ERDS2TJ102	1K	
R4604	ERDS2TJ683	68K	
R4605	ERDS2TJ221	220	
R4606	ERDS2TJ561	560	
R4607	ERDS2TJ472	4.7K	
	(B,C)		
R4608	ERDS2TJ823	82K	
R4609	ERDS2TJ681	680	
	(A)		
	ERDS2TJ391	390	
	(B,C)		
R4610	ERDS2TJ562	5.6K	
	(B,C)		
R4611	ERDS2TJ561	560	
R4613	ERDS2TJ103	10K	
R4614	ERDS2TJ103	10K	
	(A)		
	ERDS2TJ153	15K	
	(B,C)		
R4615	ERDS2TJ100	10	
R4616	ERDS2TJ221	220	
R4617	ERQ1ABJP4R7S	FUSE 1W 4.7 ⚠	AKEI
R4618	ERDS2TJ823	82K	
R4619	ERDS2TJ103	10K	
R4620	ERDS2TJ681	680	
	(A)		
	ERDS2TJ391	390	
	(B,C)		
R4623	ERDS2TJ103	10K	
	(A)		
	ERDS2TJ153	15K	
	(B,C)		
R4624	ERDS2TJ100	10	
R4625	ERDS2TJ103	10K	
	(B,C)		
R4626	ERDS2TJ331	330	
R4628	ERDS2TJ471	470	
	(A)		
	ERDS2TJ681	680	
	(B,C)		
R4629	ERDS2TJ471	470	
	(A)		
	ERDS2TJ681	680	
	(B,C)		
R4630	ERDS2TJ562	5.6K	
	(A)		
R4631	ERDS2TJ392	3.9K	
	(A)		

Ref. No.	Part No.	Part Name	Remarks
		CAPACITORS	
C4601	ECA1CM220B	ELECTROLYTIC 16V 22	
C4602	ECA1CM470B	ELECTROLYTIC 16V 47	
C4603	ECA1CM100B	ELECTROLYTIC 16V 10	
C4604	ECA1HM4R7B	ELECTROLYTIC 50V 4.7	
C4605	ECA1HM4R7B	ELECTROLYTIC 50V 4.7	
C4607	VCYSBRE103KX	CERAMIC 25V 0.01	AKEI
	(A)		
	VCYSBRE473KX	CERAMIC 25V 0.047	AKEI
	(B,C)		
C4608	ECA1CM100B	ELECTROLYTIC 16V 10	
C4609	ECA1CM101B	ELECTROLYTIC 16V 100	
C4610	VCYSBRE473KX	CERAMIC 25V 0.047	AKEI
C4611	ECA1CM470B	ELECTROLYTIC 16V 47	
C4612	ECA1CM100B	ELECTROLYTIC 16V 10	
C4613	ECA1HM4R7B	ELECTROLYTIC 50V 4.7	
C4614	VCYSBRE103KX	CERAMIC 25V 0.01	AKEI
	(A)		
	VCYSBRE473KX	CERAMIC 25V 0.047	AKEI
	(B,C)		
C4615	ECA1CM100B	ELECTROLYTIC 16V 10	
C4616	ECA1EM102B	ELECTROLYTIC 25V 1000	AKEI
C4617	ECA1CM101B	ELECTROLYTIC 16V 100	
C4618	VCYSBRE473KX	CERAMIC 25V 0.047	AKEI
C4624	ECQB1H473KF	POLYESTER 50V 0.047	
C4625	ECQB1H473KF	POLYESTER 50V 0.047	
		PIN HEADERS	
P4601	VEKS5575	CONNECTOR CORD W/PLUG	AKEI
P4602	VJPS0275	CONNECTOR 5P	
P4603	VEKS5623	P4603 CONNECTOR CORD W/PLUG	AKEI
P4604	VJPS0268	CONNECTOR 2P	
P4605	VJPS0268	CONNECTOR 2P	
		MISCELLANEOUS	
E40	VMXS0876	P.C.B. SPACER A	AKEI
		TV POWER C.B.A.	■
		INTEGRATED CIRCUITS	
IC801	STR30130	IC, LINEAR +130V REGULATOR	⚠
		DIODES	
D591	TRPW5B0M050D	THERMISTOR	⚠
D801	D4SB80		⚠
		RESISTORS	
R591	ERF5ZJ121	W FLMPRF 5W 120	
R801	ERF5ZKR82	W FLMPRF +-10% 5W 0.82	⚠
R802	ERDS1FJ103P	1/2W 10K	⚠
	OR ERDS1FPJ103V	1/2W 10K	⚠
R803	ERF10ZK8R2	W FLMPRF +-10% 10W 8.2	⚠
R804	ERF20ZJ131	W FLMPRF 20W 130	
R805	ERDS2TJ104	100K	
R806	ERQ14AJ470P	FUSE 47	⚠
R813	ERDS2TJ124	120K	
		CAPACITORS	
C801	ECKM2H472PE7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKM2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKW2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
C802	ECKM2H472PE7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKM2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKW2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
C803	ECKM2H472PE7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKM2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKW2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠

(E23, E42, E47, E48)

Ref. No.	Part No.	Part Name	Remarks
C804	ECKM2H472PE7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKM2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKW2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
C805	ECOS2DP681BB	ELECTROLYTIC 200V 680	⚠ AKEI
C806	ECEA2EU330	ELECTROLYTIC 250V 33	
		COILS	
L802	VLQS0165	22	⚠
	OR VLQS9A220M	+-20% 22	⚠
		PIN HEADERS	
P801	VEKS5577	CONNECTOR CORD W/PLUG	AKEI
P806	VJPS0303	CONNECTOR 2P	
		FUSE & PROTECTOR	
F802	XBA1C15NU100	FUSE 125V 1.5A	⚠
		MISCELLANEOUS	
E23	VJSS3325	FUSE HOLDER	AKEI
E42	TUC77627	GROUNDING PLATE,AL	AKEI
E47	XTW3+10J	TAPPING SCREW,STEEL	
E48	XYN3+F10S	SCREW W/WASHER,STEEL	
		TV MAIN C.B.A.	■
		INTEGRATED CIRCUITS	
IC451	LA7837	IC, LINEAR VERTICAL OUT	
		TRANSISTORS	
Q431	2SA733(TQ)		AKEI
Q501	2SC2653H-CL		
Q551	2SD1555LBMTV		⚠
	OR 2SD2499LBMA		⚠ AKEI
Q801	2SD636(Q,R,S)		
		DIODES	
D201	HZS5C2TD	ZENER 5.1V	
	(B,C)		
D202	HZS5C2TD	ZENER 5.1V	
	(B,C)		
D401	ERB12-01		
D503	ERB43-04V		
D553	ERB43-04V		
D554	MA167		
D558	ERB43-04V		
D560	ERB43-04V		
D582	ERD07-15L26		
D805	MA165		
D806	MA167		
		RESISTORS	
R401	ERDS2TJ561	560	
R402	ERDS2TJ103	10K	
R405	ERG2SJ561H	METAL OXIDE 2W 560	
R406	ERDS2TJ334	330K	
R409	ERDS2TJ273	27K	
R410	ERDS2TJ272	2.7K	
R411	ERDS2TJ823	82K	
R413	ERDS2TJ333	33K	
R415	ERX1SJ1R2P	METAL OXIDE 1W 1.2	⚠ AKEI
R422	ERD25FJ101P	100	⚠
R427	ERD25FJ5R6P	5.6	⚠
R431	ERDS2TJ103	10K	
R432	ERDS2TJ563	56K	
R433	ERDS2TJ472	4.7K	
R434	ERDS2TJ103	10K	
R435	ERDS2TJ102	1K	
R466	ERDS2TJ683	68K	

Ref. No.	Part No.	Part Name	Remarks
R468	ERDS2TJ103	10K	
R471	ERDS2TJ122	1.2K	
R502	ERDS2TJ332	3.3K	
R511	ERG2SJ272H	METAL OXIDE 2W 2.7K	
R512	ERDS2TJ102	1K	
R516	ERG2ANJ362H	METAL OXIDE 2W 3.6K	
R518	ERG3ANJ242H	METAL OXIDE 3W 2.4K	
R532	ERQ2CJP102S	FUSE 2W 1K	⚠ AKEI
R552	ERDS2TJ103	10K	
R553	ERDS2TJ102	1K	
R554	ERDS2TJ822	8.2K	
R555	ERDS2TJ683	68K	
R556	ERDS2TJ683	68K	
R558	ERG2ANJ102H	METAL OXIDE 2W 1K	⚠
R559	ERDS2TJ103	10K	
R561	ERQ3CJ3R3H	FUSE 3W 3.3	⚠ AKEI
R562	ERF5ZK2R2	W FLMPRF +-10% 5W 2.2	
R575	ERDS2TJ331	330	
R810	ERDS2TJ222	2.2K	
R811	ERDS2TJ103	10K	
R812	VRESC2TK825C	SOLID +-10% 1/2W 8.2M	⚠
	OR VRESC2TK825T	SOLID +-10% 1/2W 8.2M	⚠
R7002	ERDS2TJ271	270	
R7030	ERDS2TJ182	1.8K	
R7031	ERDS2TJ182	1.8K	
R7032	ERDS2TJ182	1.8K	
		CAPACITORS	
C401	ECEA1HGE2R2	ELECTROLYTIC 50V 2.2	
C402	ECEA1CU471	ELECTROLYTIC 16V 470	
C408	ECA1HGE010KB	ELECTROLYTIC 50V 1	AKEI
C409	ECA1VM101B	ELECTROLYTIC 35V 100	
C413	ECQB1H104KF	POLYESTER 50V 0.1	
C414	ECEA1CU222	ELECTROLYTIC 16V 2200	
C418	ECA1VM101B	ELECTROLYTIC 35V 100	
C458	ECQB1H103KF	POLYESTER 50V 0.01	
C510	ECKW2H681KB5	CERAMIC 500V 680P	
C524	ECKC3D102KBN	CERAMIC 2KV 1000P	⚠
	OR ECKC3D102KBP	CERAMIC 2KV 1000P	⚠
C534	VCYSBRC104MX	CERAMIC +-20% 16V 0.1	
C552	ECEA1VU470	ELECTROLYTIC 35V 47	
C553	ECKW2H221KB5	CERAMIC 500V 220P	
C554	ECWH12H562J5	POLYESTER +-5% 1200V 5600P	⚠
	OR TAC51562P500	POLYESTER +-5% 1200V 5600P	⚠ AKEI
	OR TCWH12H562J5	POLYESTER +-5% 1200V 5600P	⚠ AKEI
	OR VCFSF16562JB	POLYESTER +-5% 1200V 5600P	⚠ AKEI
C556	ECQF2H564JZA	POLYESTER +-5% 200V 0.56	⚠
	OR VCFSD2D564JB	POLYESTER +-5% 200V 0.56	⚠ AKEI
C560	ECEA2EU100	ELECTROLYTIC 250V 10	
C561	ECA2CM4R7B	ELECTROLYTIC 160V 4.7	
C563	ECEA180V33	ELECTROLYTIC 180V 33	
C573	ECKW2H122KB5	CERAMIC 500V 1200P	
C581	ECWH12H103JR	POLYESTER +-5% 1200V 0.01	AKEI
C807	ECKCNS223ZV	CERAMIC +80%-20% 125V 0.022	⚠
	OR ECKDNS223ZV	CERAMIC +80%-20% 125V 0.022	⚠
C811	ECKCNS223ZV	CERAMIC +80%-20% 125V 0.022	⚠
	OR ECKDNS223ZV	CERAMIC +80%-20% 125V 0.022	⚠
C813	VCKSFKK332MY	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSFMK332MY	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSFVK332MY	CERAMIC +-20% 125V 3300P	⚠ AKEI
C814	ECKDRS103ZV	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEKD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEMD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSGKD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSGMD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTKG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTMG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUKD103MY	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSUMD103MY	CERAMIC +-20% 125V 0.01	⚠
C7001	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C7002	VCYSARH330J	CERAMIC +-5% 50V 33P	
C7007	ECQB1H104P9	POLYESTER +100%-0% 50V 0.1	
C7008	ECEA1CU221	ELECTROLYTIC 16V 220	
C7010	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C7013	ECEA1CU100	ELECTROLYTIC 16V 10	
C7014	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C7018	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	

(E17, E18, E21, E22, E29, E41, E43, E44, E45, E46, E48, E49, E51, E52, E53, E80)

Ref. No.	Part No.	Part Name	Remarks
C7019	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C7031	VCYSARH330J	CERAMIC +-5% 50V 33P	
C7032	VCYSARH330J	CERAMIC +-5% 50V 33P	
C7033	VCYSARC103NY	CERAMIC +-30% 16V 0.01	
C7034	VCYSARC103NY	CERAMIC +-30% 16V 0.01	
		COILS	
L501	ELH5L7017	HORIZONTAL LINEAR COIL	⚠ AKEI
	OR LLH6602T	HORIZONTAL LINEAR COIL	⚠ AKEI
L552	TSC925	FERRITE BEAD CORE FILTER	
L553	TLH15907	2A 0.53	
L801	ELF18D650B	LINE FILTER 2.4A 3.3M	⚠
L7001	ELESN100KA	10	
L7002	ELESN101KA	100	
		PIN HEADERS	
PK1	VJSS0871	CONNECTOR RECEPTACLE 13P	AKEI
PK2	VJSS0872	CONNECTOR RECEPTACLE 19P	AKEI
PK3	VJSS0869	CONNECTOR RECEPTACLE 7P	AKEI
PK5	VJPS0275	CONNECTOR 5P	
PK10	VJPS0273	CONNECTOR 3P	
P803	VEKS5579	CONNECTOR CORD W/PLUG	AKEI
P804	VEKS5578	CONNECTOR CORD W/PLUG	AKEI
		FUSE & PROTECTOR	
F801	XBA1F40NU100	FUSE 125V 4A	⚠
		RELAY	
RL801	TSEH0005	RELAY,120V	⚠
	OR TSEH8007	RELAY,120V	⚠ AKEI
	OR TSE1860-1	RELAY,120V	⚠
		TRANSFORMER	
T501	ETH19Y70AY		
T502	ETE16Z37AY		⚠
T551	LLF76501F1		⚠ AKEI
		JACKS	
JK202	VJHS0354	AUDIO JACK SOCKET	
	(B,C)		
		PRINTED CIRCUIT BOARD ASSEMBLY	
E17	LRP63002N	CRT C.B.A.	▲ RTL AKEI
E18	LRP23011A	TV MAIN CHILD C.B.A.	▲ RTL AKEI
		MISCELLANEOUS	
E21	VEQS0598	TUNER,UHF/VHF/FM NR	
E22	LFX6102A	AC CORD W/PLUG	⚠ AKEI
	OR TSX7151-N	AC CORD W/PLUG	⚠ AKEI
E29	VMTS0059	CUSHION,RUBBER	
E41	TUC77626	HEAT SINK PLATE,STEEL	AKEI
E43	TUC77625	HEAT SINK PLATE,STEEL	AKEI
E44	LML69001A	ANODE LEAD CLAMPER	AKEI
E45	TMM76403-1	CLAMPER	
E46	XTV3+10G	TAPPING SCREW,STEEL	
E48	XYN3+F10S	SCREW W/WASHER,STEEL	
E49	XYN3+F8S	SCREW W/WASHER,STEEL	
E51	TJC6319	FUSE HOLDER	
E52	TUC77542	FBT SHIELD PLATE,STEEL	AKEI
E53	TMM16480-1	CLAMPER	
E80	LUS63002A	SUB HEAT SINK PLATE,STEEL	AKEI

Ref. No.	Part No.	Part Name	Remarks
		TV MAIN CHILD C.B.A.	▲
		TRANSISTORS	
Q505	2SA733(TQ)		AKEI
Q506	2SA733(TQ)		AKEI
Q507	2SC945A(TQ)		
Q541	2SA733(TQ)		AKEI
Q571	2SC945A(TQ)		
		DIODES	
D507	MA4200-H	ZENER 20V	
D508	MA165		
D541	MA165		
		RESISTORS	
R501	ERDS2TJ821	820	
R503	ER0S2TKF1152	METAL FILM +-1% 11.5K	⚠
R507	ERDS2TJ472	4.7K	
R510	ERDS2T0	0	●
R519	ERDS2TJ563	56K	
R521	ERDS2TJ101	100	
R522	ERDS2TJ103	10K	
R523	ERDS2TJ333	33K	
R524	ERDS2TJ223	22K	
R525	ERDS2TJ822	8.2K	
R526	ERDS2TJ155	1.5M	
R528	ERDS2TJ272	2.7K	
R541	ERDS2TJ473	47K	
R542	ERDS2TJ103	10K	
R543	ERDS2TJ472	4.7K	
R544	ERDS2TJ472	4.7K	
R571	ERDS2TJ101	100	
R572	ERDS2TJ222	2.2K	
R573	ERDS2TJ100	10	
R574	ERDS2TJ272	2.7K	
		CAPACITORS	
C504	ECKW1H102KB5	CERAMIC 50V 1000P	
C513	ECA1HM100B	ELECTROLYTIC 50V 10	
C516	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C520	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C521	ECA1HM100B	ELECTROLYTIC 50V 10	
C523	ECA1HM010B	ELECTROLYTIC 50V 1	
C541	ECA1HM100B	ELECTROLYTIC 50V 10	
C558	ECA1VM101B	ELECTROLYTIC 35V 100	
		PIN HEADERS	
P501	VJHS0338	PACK PIN 8P	
P502	VJHS0336	PACK PIN 6P	
P503	VJHS0334	PACK PIN 4P	
		CRT C.B.A.	▲
		TRANSISTORS	
Q351	2SC3063		AKEI
Q352	2SC3063		AKEI
Q353	2SC3063		AKEI
		RESISTORS	
R351	ERG2ANJ153H	METAL OXIDE 2W 15K	
R352	ERG2ANJ153H	METAL OXIDE 2W 15K	
R353	ERG2ANJ153H	METAL OXIDE 2W 15K	
R354	ERD25TJ272	2.7K	
R355	ERD25TJ272	2.7K	
R356	ERD25TJ272	2.7K	
R357	ERDS2TJ332	3.3K	
R358	ERDS2TJ332	3.3K	
R359	ERDS2TJ332	3.3K	
R360	ERDS2TJ331	330	

(E50, E57)

Ref. No.	Part No.	Part Name	Remarks
R361	ERDS2TJ331	330	
R362	ERDS2TJ331	330	
R363	ERDS2TJ101	100	
R364	ERDS2TJ101	100	
R365	ERDS2TJ101	100	
		CAPACITORS	
C351	VCYSARH561KB	CERAMIC 50V 560P	
C352	VCYSARH561KB	CERAMIC 50V 560P	
C353	VCYSARH681KB	CERAMIC 50V 680P	
C354	ECKC3D102KB	CERAMIC 2KV 1000P	
		PIN HEADERS	
P353	LJP25004A	CRT SOCKET	AKEI
P354	TEL302-5X	CHECK TERMINAL	
		MISCELLANEOUS	
E50	TMM77412	CLAMPER	AKEI
		ELECTRICAL PARTS	
		LOCATED ON CHASSIS	
IC2501	AN3845SC	IC, LINEAR CAP./LOADING DRIVE	
E57	VJWS8BN110BB	COMMU CABLE W/OUT PLUG	AKEI

Ref. No.	Part No.	Part Name	Remarks
		SUMMARY OF "E" ITEM NUMBERS	
		REFER TO ELECTRICAL PARTS LIST	
		FOR MODEL INFORMATION	
E1	VEPS3050E	MAIN C.B.A.	RTL
E1	VEPS3050D	MAIN C.B.A.	RTL
E2	VEPS4016A1	TV STEREO C.B.A.	RTL
E2	VEPS4024B	HIFI AUDIO C.B.A.	RTL
E4	VEPS8026A1	OPERATION I C.B.A.	RTL
E5	VEPS8027A1	OPERATION II C.B.A.	RTL
E6	VEPS5012Z1	HEAD AMP C.B.A.	RTL
E6	VEPS5010Y	Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.	RTL
E7	VEPS0A25A	JUNCTION C.B.A.	RTL
E9	VEPS04120G1	AUDIO/VIDEO JACK C.B.A.	RTL
E9	VEPS04128F1	AUDIO/VIDEO JACK C.B.A.	RTL
E11	VEPS4014F	STEREO AMP C.B.A.	RTL
E11	VEPS4014G	STEREO AMP C.B.A.	RTL
E12	LRP23009A	TV POWER C.B.A.	RTL
E16	LRM61005D	TV MAIN C.B.A.	RTL
E16	LRM61005C	TV MAIN C.B.A.	RTL
E17	LRP63002N	CRT C.B.A.	RTL
E18	LRP23011A	TV MAIN CHILD C.B.A.	RTL
E21	VEQS0598	TUNER,UHF/VHF/FM NR	
E22	LFX6102A	AC CORD W/PLUG	⚠
E22	TSX7151-N	AC CORD W/PLUG	⚠
E23	VJSS3325	FUSE HOLDER	
E27	PNA4617M00HD	INFRARED RECEIVER UNIT	
E29	VMTS0059	CUSHION,RUBBER	
E30	VMTS0035	CUSHION,RUBBER	
E36	VMXS0575	LED SPACER	
E39	VMAS1912	P.C.B. SUPPORT ANGLE	
E40	VMXS0876	P.C.B. SPACER A	
E41	TUC77626	HEAT SINK PLATE,STEEL	
E42	TUC77627	GROUNDING PLATE,AL	
E43	TUC77625	HEAT SINK PLATE,STEEL	
E44	LML69001A	ANODE LEAD CLAMPER	
E45	TMM76403-1	CLAMPER	
E46	XTV3+10G	TAPPING SCREW,STEEL	
E47	XTW3+10J	TAPPING SCREW,STEEL	
E48	XYN3+F10S	SCREW W/WASHER,STEEL	
E49	XYN3+F8S	SCREW W/WASHER,STEEL	
E50	TMM77412	CLAMPER	
E51	TJC6319	FUSE HOLDER	
E52	TUC77542	FBT SHIELD PLATE,STEEL	
E53	TMM16480-1	CLAMPER	
E54	VSCS1072	HEAT SINK PLATE,STEEL	
E55	XNG3	NUT,STEEL	
E57	VJWS8BN110BB	COMMU CABLE W/OUT PLUG	
E80	LUS63002A	SUB HEAT SINK PLATE,STEEL	

Panasonic®

MATSUSHITA ELECTRIC

Printed in Japan